

PR	19-APR-1999;	99US-0130077.	PR	19-JUL-1999;	99US-0144335.
PR	21-APR-1999;	99US-0130459.	PR	20-JUL-1999;	99US-0144352.
PR	23-APR-1999;	99US-0130510.	PR	20-JUL-1999;	99US-0144632.
PR	23-APR-1999;	99US-0130891.	PR	21-JUL-1999;	99US-0144884.
PR	28-APR-1999;	99US-0131149.	PR	21-JUL-1999;	99US-0145086.
PR	30-APR-1999;	99US-0132048.	PR	21-JUL-1999;	99US-0145088.
PR	30-APR-1999;	99US-0132407.	PR	22-JUL-1999;	99US-0145085.
PR	04-MAY-1999;	99US-0132484.	PR	22-JUL-1999;	99US-0145087.
PR	05-MAY-1999;	99US-0132485.	PR	22-JUL-1999;	99US-0145099.
PR	06-MAY-1999;	99US-0132486.	PR	22-JUL-1999;	99US-0145192.
PR	06-MAY-1999;	99US-0132487.	PR	23-JUL-1999;	99US-0145145.
PR	07-MAY-1999;	99US-0132863.	PR	23-JUL-1999;	99US-0145218.
PR	11-MAY-1999;	99US-0134256.	PR	23-JUL-1999;	99US-0145224.
PR	14-MAY-1999;	99US-0134258.	PR	26-JUL-1999;	99US-0145226.
PR	14-MAY-1999;	99US-0134219.	PR	27-JUL-1999;	99US-0145313.
PR	20-MAY-1999;	99US-0135124.	PR	27-JUL-1999;	99US-0145918.
PR	21-MAY-1999;	99US-0135353.	PR	27-JUL-1999;	99US-0145919.
PR	24-MAY-1999;	99US-0135629.	PR	27-JUL-1999;	99US-0145915.
PR	25-MAY-1999;	99US-0136021.	PR	28-JUL-1999;	99US-0145951.
PR	27-MAY-1999;	99US-0136392.	PR	28-JUL-1999;	99US-0145218.
PR	28-MAY-1999;	99US-0136782.	PR	02-AUG-1999;	99US-0146386.
PR	01-JUN-1999;	99US-0137222.	PR	02-AUG-1999;	99US-0146389.
PR	03-JUN-1999;	99US-0137522.	PR	06-AUG-1999;	99US-0147303.
PR	04-JUN-1999;	99US-0137502.	PR	03-AUG-1999;	99US-0147316.
PR	08-JUN-1999;	99US-0138094.	PR	04-AUG-1999;	99US-0147204.
PR	10-JUN-1999;	99US-0138847.	PR	10-AUG-1999;	99US-0147305.
PR	10-JUN-1999;	99US-0139119.	PR	11-AUG-1999;	99US-0148319.
PR	14-JUN-1999;	99US-0139452.	PR	12-AUG-1999;	99US-0148341.
PR	16-JUN-1999;	99US-0139452.	PR	13-AUG-1999;	99US-0148365.
PR	16-JUN-1999;	99US-0139453.	PR	13-AUG-1999;	99US-0147204.
PR	17-JUN-1999;	99US-0139452.	PR	16-AUG-1999;	99US-0147302.
PR	18-JUN-1999;	99US-0139454.	PR	17-AUG-1999;	99US-0147935.
PR	18-JUN-1999;	99US-0139455.	PR	18-AUG-1999;	99US-0149226.
PR	18-JUN-1999;	99US-0139456.	PR	20-AUG-1999;	99US-0149232.
PR	18-JUN-1999;	99US-0139457.	PR	20-AUG-1999;	99US-0149229.
PR	18-JUN-1999;	99US-0139458.	PR	20-AUG-1999;	99US-0149229.
PR	18-JUN-1999;	99US-0139459.	PR	23-AUG-1999;	99US-0149335.
PR	18-JUN-1999;	99US-0139460.	PR	23-AUG-1999;	99US-0149330.
PR	18-JUN-1999;	99US-0139461.	PR	25-AUG-1999;	99US-0150566.
PR	18-JUN-1999;	99US-0139462.	PR	25-AUG-1999;	99US-0150884.
PR	18-JUN-1999;	99US-0139463.	PR	27-AUG-1999;	99US-0151055.
PR	18-JUN-1999;	99US-0139750.	PR	27-AUG-1999;	99US-0151056.
PR	18-JUN-1999;	99US-0139763.	PR	27-AUG-1999;	99US-0151080.
PR	18-JUN-1999;	99US-0139817.	PR	30-AUG-1999;	99US-0151303.
PR	22-JUN-1999;	99US-0139899.	PR	31-AUG-1999;	99US-0151930.
PR	23-JUN-1999;	99US-0140353.	PR	01-SEP-1999;	99US-0152363.
PR	23-JUN-1999;	99US-0140354.	PR	07-SEP-1999;	99US-0152070.
PR	24-JUN-1999;	99US-0140635.	PR	10-SEP-1999;	99US-0153070.
PR	28-JUN-1999;	99US-0140823.	PR	13-SEP-1999;	99US-0153758.
PR	29-JUN-1999;	99US-0140991.	PR	15-SEP-1999;	99US-0154018.
PR	30-JUN-1999;	99US-0141207.	PR	16-SEP-1999;	99US-0154039.
PR	01-JUL-1999;	99US-0141842.	PR	20-SEP-1999;	99US-0154779.
PR	01-JUL-1999;	99US-0142154.	PR	22-SEP-1999;	99US-0155139.
PR	02-JUL-1999;	99US-0142055.	PR	23-SEP-1999;	99US-0155486.
PR	06-JUL-1999;	99US-0142390.	PR	24-SEP-1999;	99US-0155758.
PR	08-JUL-1999;	99US-0142803.	PR	28-SEP-1999;	99US-0156458.
PR	09-JUL-1999;	99US-0142920.	PR	16-OCT-1999;	99US-0156596.
PR	12-JUL-1999;	99US-0142977.	PR	20-OCT-1999;	99US-0157117.
PR	13-JUL-1999;	99US-0143442.	PR	04-OCT-1999;	99US-0157753.
PR	14-JUL-1999;	99US-0144005.	PR	05-OCT-1999;	99US-0157865.
PR	15-JUL-1999;	99US-0144005.	PR	06-OCT-1999;	99US-0158029.
PR	16-JUL-1999;	99US-0144086.	PR	07-OCT-1999;	99US-0158232.
PR	16-JUL-1999;	99US-0144086.	PR	08-OCT-1999;	99US-0158232.
PR	19-JUL-1999;	99US-0144332.	PR	12-OCT-1999;	99US-0159293.
PR	19-JUL-1999;	99US-0144332.	PR	13-OCT-1999;	99US-0159294.
PR	19-JUL-1999;	99US-0144334.	PR	13-OCT-1999;	99US-0159295.

PR 14-OCT-1999; 990S-0159330.
 PR 14-OCT-1999; 990S-0159331.
 PR 14-OCT-1999; 990S-0159637.
 PR 18-OCT-1999; 990S-0159638.
 PR 21-OCT-1999; 990S-0160741.
 PR 21-OCT-1999; 990S-0160767.
 PR 21-OCT-1999; 990S-0160768.
 PR 21-OCT-1999; 990S-0160770.
 PR 21-OCT-1999; 990S-0160814.
 PR 22-OCT-1999; 990S-0160815.
 PR 22-OCT-1999; 990S-0160900.
 PR 22-OCT-1999; 990S-0160911.
 PR 25-OCT-1999; 990S-0161404.
 PR 25-OCT-1999; 990S-0161405.
 PR 26-OCT-1999; 990S-0161359.
 PR 26-OCT-1999; 990S-0161360.
 PR 26-OCT-1999; 990S-0161361.
 PR 28-OCT-1999; 990S-0161920.
 PR 28-OCT-1999; 990S-0161922.
 PR 29-OCT-1999; 990S-0162142.

Query Match
 Best Local Similarity 100.0%; Score 1464; DB 21; Length 1464;
 Matches 1464; Conservative 0; Mismatches 0; Indels 0; gaps 0;

QY 1 ATGGATGCTATGGAGGGACCTGAGATCCGGGACCAAACCTACGCCAACCTGGTTAT 60
 DB 1 ATGGATGCTATGGAGGGACCTGAGATCCGGGACCAAACCTACGCCAACCTGGTTAT 60
 QY 61 CACTATCTGATCACTACCTTTAACTCATGCTCCCTCTAATGGCTTTGGTC 120
 - Db 61 CACTATCTGATCACTACCTTTAACTCATGCTCCCTCTAATGGCTTTGGTC 120
 QY 121 ATGAACTGTCATGTTAGCCAAACCATCTCAGCTTATACAAATCCACCGATTC 180
 Db 121 ATGAACTGTCATGTTAGCCAAACCATCTCAGCTTATACAAATCCACCGATTC 180
 QY 181 ATCAGTCGCTATTACTCTGCCATCTGTCGGATCATGCTCTTCATGCTCGACCTGA 240
 Db 181 ATCAGTCGCTATTACTCTGCCATCTGTCGGATCATGCTCTTCATGCTCGACCTGA 240
 QY 241 TCCATCTCTCTAGATTACTCTGCTACCTCCGCCCTGGAGCTACAGAAAGTAGCTAC 300
 Db 241 TCCATCTCTCTAGATTACTCTGCTACCTCCGCCCTGGAGCTACAGAAAGTAGCTAC 300
 QY 301 CAGAACTCATGACACACTCTGGCTCTGGCTCTGGTAGTGTAGCTACAGATTC 360
 Db 301 CAGAACTCATGACACACTCTGGCTCTGGCTCTGGTAGTGTAGCTACAGATTC 360
 QY 361 CAGAGGAGATCTGATTGCTGCTCTGGCTCTGGTAGTGTAGCTACAGATTC 420
 Db 361 CAGAGGAGATCTGATTGCTGCTCTGGTAGTGTAGCTACAGATTC 420
 QY 421 CACTCATCCCTCGCGCTTCTACTATGGCTGAGAGAGCGGAGCGGAGTATC 480
 Db 421 CACTCATCCCTCGCGCTTCTACTATGGCTGAGAGAGCGGAGCGGAGTATC 480
 QY 481 TTGGGGCCACTCGACATCTTCTGGAGATACAAAAATCACTCTGGAGATGGTT 540
 Db 481 TTGGGGCCACTCGACATCTTCTGGAGATACAAAAATCACTCTGGAGATGGTT 540
 QY 541 CTGTTGTTGATTTGTTGTTACCCCTACGCCCTCTTATCCGGCTCATGTTAAC 600
 Db 541 CTGTTGTTGATTTGTTGTTACCCCTACGCCCTCTTATCCGGCTCATGTTAAC 600
 QY 601 AAGTATAAGCTTAGGAGAACATTAAGAGCTTAACTTGGAGAATGGAGTAGTGTAC 600
 Db 601 AAGTATAAGCTTAGGAGAACATTAAGAGCTTAACTTGGAGAATGGAGTAGTGTAC 600

QY 661 GGTGTTATCGCGGGTAGATCTAGTGTACAAATCCATAGAACACTTTGCT 720
 Db 661 GGTGTTATCGCGGGTAGATCTAGTGTACAAATCCATAGAACACTTTGCT 720
 QY 721 CTGTGGTTAGTACTGAGACATCACCTGAGATTGGTATTTGGTACAGAACATG 780
 Db 721 CTGTGGTTAGTACTGAGACATCACCTGAGATTGGTATTTGGTACAGAACATG 780
 QY 781 TGTATCCCTAATGCTGTTAGAGACATCACCTGAGATTGGTATTTGGTACAGAACATG 840
 Db 781 TGTATCCCTAATGCTGTTAGAGACATCACCTGAGATTGGTATTTGGTACAGAACATG 840
 QY 841 TGGATCGAAACGATCCAGTAACTGCTTCTACGTCAGGACTCATAAAGATCT 900
 Db 841 TGGATCGAAACGATCCAGTAACTGCTTCTACGTCAGGACTCATAAAGATCT 900
 QY 901 GATGAGACGATTCTATGGTGTGATCAAGAAGAACAGATGAGCTTGGTACAGGAGTT 960
 Db 901 GATGAGACGATTCTATGGTGTGATCAAGAAGAACAGATGAGCTTGGTACAGGAGTT 960
 QY 961 TCTTGTCTAAAGATCTTGGCTTACGGAGAACCTTAAGGAGATACTCTCT 1020
 Db 961 TCTTGTCTAAAGACTTATGGCTTACGGAGAACCTTAAGGAGATACTCTCT 1020
 QY 1021 TGGGTTCTGTTCTCTATAGGCTCTTGTCTCTGCACTTTGGCT 1080
 Db 1021 TGGGTTCTGTTCTCTATAGGCTCTTGTCTCTGCACTTTGGCT 1080
 QY 1081 AAGAATTGTCAGACAGAGAGAGAGGCTTACATACCGATTCAGCTTGTTA 1140
 Db 1081 AAGAATTGTCAGACAGAGAGAGGCTTACATACCGATTCAGCTTGTTA 1140
 QY 1141 GATCCTTGTATGCTACCGGGAGTAGAGCGGTGTTGAGCTAGAGAGTTA 1200
 Db 1141 GATCCTTGTATGCTACCGGGAGTAGAGCGGTGTTGAGCTAGAGAGTTA 1200
 QY 1201 AAGCTTCCAAACATGTTGAGCGCTCTAGATTACTCTGATGTTGAAACACT 1260
 Db 1201 AACGTTCTCACAACATGTTGAGCGCTCTAGATTACTCTGATGTTGAAACACT 1260
 QY 1261 TCCTCTAGCTCTATGGTATGATGTTGCTTACACGGAAGCTAAAGGAAGATGAGAA 1320
 Db 1261 TCCTCTAGCTCTATGGTATGATGTTGCTTACACGGAAGCTAAAGGAAGATGAGAA 1320
 QY 1321 GGAACAGAGTTGGCAGATGCTTGTGAGCTACAGCGCGCTTGG 1380
 Db 1321 GGAACAGAGTTGGCAGATGCTTGTGAGCTACAGCGCGCTTGG 1380
 QY 1381 GREGCTCTCGCAATGGAGCCCTGGTACACATCTCTGGAGACATGCACTCCATAGA 1440
 Db 1381 GPGCCTCTCGCAATGGAGCCCTGGTACACATCTCTGGAGACATGCACTCCATAGA 1440
 QY 1441 TATCCGTTAGATCCATCTTG 1464
 Db 1441 TATCCGTTAGATCCATCTTG 1464

RESULT 2
 AAF6293 ID AAF6693 standard; DNA; 2509 bp.
 XX AC AAF6693;
 XX DT 08-MAY-2001 (first entry)
 DE Arabidopsis 'KCS2' genomic DNA.
 XX Long chain fatty acid condensing enzyme; KCS2;
 KW beta-ketoacyl-coenzyme A synthase 2; cosuppression; antisense;
 KW screening; ds.
 OS Arabidopsis sp.

PN WO200107586-A2.
 XX 01-FEB-2001.
 PD XX 21-JUL-2000; 2000WO-CA00860.
 PR XX 22-JUL-1999; 99US 0145013.
 PA XX (UYBR-) UNIV BRITISH COLUMBIA.
 XX PT Kunst, L; Clemens, S;
 XX WPI: 2001-168548/17.
 DR XX Novel nucleic acid sequence encoding plant long chain fatty acid (LCFA) condensing enzyme (fatty acid elongase) useful for producing transgenic plants having altered fatty acid content in the tissues.
 PS XX Example 1; Fig 1; 32PP; English.
 The present invention relates to a plant long chain fatty acid condensing enzyme, KCS2 (beta-ketoacyl-coenzyme A synthase 2). The invention is useful in cosuppression or antisense inhibition, as a plant breeding tool, as molecular markers to aid in plant breeding programs and in screening.

Sequence 2509 BP; 748 A; 478 C; 497 G; 786 T; 0 other;
 Query Match 100.0%; Score 1464; DB 22; Length 2509;
 Best Local Similarity 100.0%; Pred. No. 0; Mismatches 0; Indels 0; Gaps 0; Matches 1464; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 ATGGGAGCTTAATGGAGGACCTGTAGATCCGACCCAAACTACGTCAGCTGGTAT 60
 Db 1046 ATGGATCCCTAATGGAGGACCTGTAGATCCGACCCAAACTACGTCAGCTGGTAT 1105
 QY 61 CACTATCTGACTCACTTTAACCTGATGTCCTCATGGCTGGTTGTC 120
 Db 1106 CACTATCTGACTCACTTTAACCTGATGTCCTCATGGCTGGTTGTC 1165
 QY 121 ATGAAAGCTCTCATGTTAACGCTAACACATCTCAGCTTATACATCCACGGATC 180
 Db 1166 ATGATATGCTTAATGTTAACCTAACCATCTCAGCTTATACATCCACGGATC 1225
 QY 181 ATCTTGCATCACTCTGCGCATGTCCTCATGGCTGGTTGTC 240
 Db 301 CAGAAATCATGACAACACTCTAGTTGATCAGATTCAGCTAACGGATC 360
 Db 1346 CAGAAATCATGACAACACTCTAGTTGATCAGATTCAGCTAACGGATC 300
 QY 361 CAGAGGAGAGCTGTAGTCGCTCTGGTCTGGAGAGACTTATACCGGATCTT 420
 Db 1406 CAGAGGAGAGCTGTAGTCGCTCTGGTCTGGAGAGACTTATACCGGATCTT 1465
 Db 1646 AAGTATAAGCTTAGAGGAACATTAGAGCTTAACTTGGAGAAATGGATGTC 1705
 QY 661 GGTGTTATCGGGTAGATCTAGCTAGTGTATGATATGTCATGGACACTTGT 720
 Db 1706 GGTTTATCGGGTAGATCTAGTGTATGATATGTCATGGACACTTGT 1765
 QY 721 CTCTGCTTTAGTACTGAGAAATCACTCAGATGTTATGGTACAGAAAGCACTG 780
 Db 1766 CTCTGCTTTAGTACTGAGAAATCACTCAGATGTTATGGTACAGAAAGCACTG 1825
 QY 781 TTAGCTCTAATGCTGTTAGTGTGGTGGTGGTCCGGGTCGCTTGAGAACAGCT 840
 Db 1826 TTGATCCCTAATGCTGTTAGTGTGGTGGTGGTCCGGGTCGCTTGAGAACAGCT 1885
 QY 841 TTGGATCGAAACGATCAAGTATAAGCTGTCAAGGTCAAGGTCAGGACTCATAAGGATC 900
 Db 1886 TTGATCGAAACGATCAAGTATAAGCTGTCAAGGTCAGGACTCATAAGGATC 1945
 QY 901 GATGAGAAGCCATCAATGCTGATCAAGAACAGATGAGTGTGAGAACAGGGATT 960
 Db 1946 GATGAGAAGCCATCAATGCTGATCAAGAACAGAAGACAGAGTGTGAGAACAGGGATT 2005
 QY 961 TCTTGTCTAAAGTCTTATGGCTATAGCTGGAGACCTTAAGGAGATATCTCT 1020
 Db 2006 TCTTGTCTAAAGTCTTATGGCTATAGCTGGAGACCTTAAGGAGATATCTCT 2065
 QY 1021 TTGGGCTCTGGTCTCTATAGCGAGGAGTTGTTGGACTTTGTGTCT 1080
 Db 2066 TTGGGCTCTGGTCTCTATAGCGAGGAGTTGTTGGACTTTGTGTCT 2125
 QY 1081 AAGAGATGTTCAATGACAAGAGAACCTTACATCCGGATTCAAGTGTCTTA 1140
 Db 2126 AAGAGATGTTCAATGACAAGAGAACCTTACATCCGGATTCAAGTGTCTTA 2185
 QY 1141 GATCATTCGATACGCGGGAGGTAGAGCCGTATGATGAGCTTGGAGAGCTTA 1200
 Db 2186 GATCATTCGATACGCGGGAGGTAGAGCCGTATGATGAGCTTGGAGAGCTTA 2245
 QY 1201 AAGCTTCTCAAACAAATGTTGAGGSGCTGAGATGACTTGTGATATGGAAACT 1260
 Db 2246 AAGCTTCTCAAACAAATGTTGAGGSGCTGAGATGACTTGTGATATGGAAACT 2305
 QY 1261 TCTCTTCTGATATGGTGTGATGCTTACAGGAGACTCTACGGGCTTGGAGAGCTTA 1320
 Db 2306 TCTCTTCTGATATGGTGTGATGCTTACAGGAGACTCTACGGGCTTGGAGAGCTTA 2365
 QY 1321 GAAACAGAGTTGGAGATGCTTGTGAGCTTACAGGAGACTCTACGGGCTTGGAGAGCTTA 1380
 Db 2366 GAAACAGAGTTGGAGATGCTTGTGAGCTTACAGGAGACTCTACGGGCTTGGAGAGCTTA 2425
 QY 1381 GTGCTCTCTGCAATGTGAGGCTCTGGTTACACAACTCTGGAGACATSCATCCATAGA 1440
 Db 2426 GTGCTCTCTGCAATGTGAGGCTCTGGTTACACAACTCTGGAGACATSCATCCATAGA 2485
 QY 1441 TATCCGGTTAGATGATGATCTTGA 1464
 Db 2486 TATCCGGTTAGATGATGATCTTGA 2509
 RESULT 3
 AAQ90217 ID AAQ90217 standard; cDNA; 1704 BP.
 XX
 AC AAQ90217;
 XX 04-DEC-1995 (first entry)
 DE Condensing enzyme clone Lunaria 1.
 KW Lunaria; condensing enzyme; ss.
 OS Lunaria annua.

601 AAGTATAAGCTTAGAGGAACATTAGAGCTTACCTTGGAGAAATGGATGTCCT 660

FH	Location/qualifiers
FT	42..1538
FT	CDS
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FT	345
FT	/*tag= b
misc_feature	/note= "unspecified nt"
XX	W09515387-A.
XX	08-JUN-1995.
XX	30-NOV-1994;
XX	94US-0265047.
PR	23-JUN-1994;
PR	30-NOV-1993;
XX	93US-0160602.
PA	(CALGENE) CALGENE INC.
XX	XX
SI	Lardizabal KD, Lassner MW, Metz JG;
SI	WPI; 1995-215267/28.
SI	P-PSDB; AAR77171.
XX	XX
PT	Production of very long chain fatty acid(s) in plant(s) - to produce
PT	drought and stress resistant transgenic plant(s)
PS	Claim 9; Figure 12; 149pb; English.
XX	XX
CC	The CEB15 and CEB20 <i>Brassica</i> cDNA sequences (see AAQ90210, Q990211 and AAQ90212) and the condensing enzyme encoding sequence from
CC	AAQ90225 from conserved MAs. These primers were variously used to
CC	PCR (RT-PCR) amplify fragments from RNA isolated from developing
CC	seeds of <i>Lunaria annua</i> , <i>Tropaeolum majus</i> (Nasturtium), and
CC	green liliques of <i>Arabidopsis thaliana</i> . The primers most
CC	successfully utilized were AAQ90211 and AAQ90222. These primers were
CC	used to produce three clones encoding a portion of the elongase
CC	condensing enzyme from <i>Arabidopsis</i> . From <i>Lunaria</i> a single clone
CC	was identified, LUN CEB. A cDNA library from RNA isolated from
CC	developing seeds of <i>Lunaria</i> was constructed, and LUN CEB was used
CC	to screen this library. Three classes of cDNA clones were isolated,
CC	<i>Lunaria</i> 1, <i>Lunaria</i> 5 and <i>Lunaria</i> 27. <i>Lunaria</i> 5 shares approx.
CC	85% homology with the <i>Brassica</i> CEB20 clones, and it is suggested
CC	that it is active in seed oil fatty acid elongation.
XX	XX
SQ	Sequence 1704 BP; 474 A; 359 C; 381 G; 489 T; 1 other;
Query	Match 77.4%; Score 1133; DB 16; Length 1704;
Query	Best Local Similarity 86.5%; Pred. No: 0; Mismatches 176; Indels 24; Gaps 2;
Matches	1282; Conservative 0; Mismatches 176; Indels 24; Gaps 2;
Query	7 GCTAAATGGAGGACCGCTACAGATCGGCCAACACTAGTCAGCGTGGTATCAGT 66
Db	57 GTTAAAGGAGGATCTGCTAGAGATCGGCCAACAGTGGTATCAGT 116
Query	67 CTGATCACTCACTTTAACCTAGATGTTCTCTAATGGCTGTTATCAGT 66
Db	117 CTGATCTCTACCTTTAACCTAGATGTTCTGTTATCAGT 116
Query	127 GTCTGATGTAAAGCCCTAAACCA-----TCTTCGCTTACATACCG 116
Db	177 GTCTCCCGGTTAACCTTAACCGCTCTGCTCGATCTCTCCAGTCAT 236
Query	169 TCCACCGGATCTCTCTCATCTACTCTCGCCATTGGATCCATGTCCTGTTATGGGGTCTGTCAGGAT 176
Db	237 CTCGCGGGATCTCTCTCATCTACTCTCGCCATTGGATTCAGTACAGT 296
Query	229 TCTGACGCTAGATCCATCTACCTCTGCTACCTCCCGCCCTGAGCTAA 288
Db	297 TCCCGACCTAGATCCGTTACCTCTCGACTACATGTTACCTCCGCGCGGAACACT 356
Query	289 AAAGTTAGTACCGAAGAACATCAGACAACTCTAGTTGATTCAAGTTCAAGCTTCAAGAAACT 348
Db	357 AAAGTAGCTACAGACATCTCAGATCTTACTGAGATTCAGAGTCG 416
Db	349 TCTCTGAGTTCAGAGGAGATCTGATCTCGCTGAGAGACTTAA 408
Db	417 TCGCTGAGTTCAGGGAGATCTGAGCTGCGGAGAGACTTAA 476
Db	409 CGGGATTCATTACTCTATCCCGGCTCTACTATGGCTCAGGGCTGAGAGACTTAA 468
Db	477 CGGGATCTTACACTGCTACGATCCCGCCGCTCCTACTATGGCGCGTGGAGAGACTTAA 536
Query	459 GAGGGATTAATCTGGCCACCTGACATCTTTCGAGATAACAAATCTACCTTACCC 528
Db	537 GAGCAGGTAACTCTGGTCACTCGACATCTTTCGAGATAACAAATCTACCTTACCC 596
Query	529 GAGATGGGTCCTGTTGTTGAATGTTGTTAACCTTACGCCCTCTTATCGGCC 588
Db	597 GAGATGGGTTCTGGTGTGACTGCCTGCTTAACTCAGGAAAGTGGAGCTTAACTCGGGAT 716
Query	649 GGATGTTAGCTGCTGTTGTTGTTGTTGTTACCCAGGCTCTTATCGCC 656
Db	589 ATGATGTTACAGTAAAGCTTAGGAGAACATTAGAGCTTAACTCTGGGGATG 648
Db	657 ATGATGTTGACAGTATAAGCTAGCTAGTGGAGAAAGCTGAGCTTAACTCGGGAT 716
Query	709 AACATTTGCTTGTGTTGTTGTTGTTGTTACCCAGGCTCTTATCGCC 708
Db	777 AACATATGAGCTTGTGTTGTTGTTGTTACCCAGGCTCTTATCGCC 776
Db	877 TCCACACGGCTGTGATCGAACGATCCAGTAACTGTTAGCTGTTAC 835
Query	769 AACAAAGGAAATGTGATCCCTAAATGCTGTTAGCTGGTGTGCGCTT 828
Db	837 AACAAAGCAATGTTGATCTCTTAATGTTGTTAGGTGGTGTGATCCCGGCTTCGCT 896
Query	829 TCCACACGGCTTGTGATCGAACGATCCAGTAACTGTTAGCTGTTAC 888
Db	887 TCCACACGGCTGTGATCGAACGATCCAGTAACTGTTAGCTGTTAC 956
Query	889 CAAAAAGATCTGAGAACCCATCAATGTTGTTATGAGAACAGATGAGCTT 948
Db	957 CATAAAGGATCTGATGAGAACCCATCACTGTTGTTACCCAGAACAGGACTT 1016
Query	949 AAACCCGGAGTTCTGTTGCTAAAGATCTATGGCTATAGCTGAGAGCTTAAAGACG 1008
Db	1017 AAACCCGGAGTTCTGTTGCTAAAGACTTAATGCTATAGCTGAGAGCTTAAAGAC 1076
Query	1009 ATATACCTCTTGGCTCTGGTTCTCTTATAGCGAGCTTCTCTTGTGCG 1058
Db	1077 ATATACCACTTGGCTCTGGTTCTCAATAGCGAGCTTCTCTTGTGCG 1136
Query	1069 ACTTGTGTCATAAGAGATGTTCAATG-----ACAAGAAAGAAGCTTAATACCG 1122
Db	1137 ACTTGTGTCATAAGAGATGTTCAATG-----ACAAGAAAGAAGCTTAATACCG 1136
Query	1123 GATTTCAAGCTGCTTGTAGATCTCTGTTACCGGGGAGTAGACCGCTTGTGAT 1182
Db	1197 GATTCAGCTGCTTGTAGATCTCTGTTACCGGGGAGTAGACCGCTTGTGAT 1256
Query	1183 GAGCTAGAGAGTTAACCTTCTCCAAACATGTTGGGCTCTAGATGACTT 1242
Db	1257 GATCTGAGAAGTAAAGCTTGTGAGCTTACCTGAGTCAGTACATG 1316
Query	1243 CATAATTGAACTCTCTCATGCTCTGAGATGCTTACCGGAAC 1302
Db	1317 CATAATTGAACTCTCTCATGCTCTGAGATGCTTACCGGAAC 1376
Query	1303 AAAGGAGAATGGAAAGAACAGAGTTGGAGATGCTTACCGGAAC 1362
Db	1377 AAAGGAGAATGGAAAGAACAGAGTTGGAGATGCTTACCGGAAC 1436
Query	1363 TGTACAGCGGGTTGGGGCTCTCGCAATGCGCCCTGGTTACAACTCTGG 1422

Db 1437 TGTAAACAGCGCGGTTGGGCGCTCTGGATGTCGAGATGCGAAGCTCGTTAACAACTCTGG PR 16-JUN-1999; 9905-0139453.
 QY 1423 GAACATGCACTCCATAGATATCCGGTAAGATCGATCTTGA 1464 PR 17-JUN-1999; 9905-0139492.
 Db 1497 GAACTGCACTCCATAGATATCCGGTAAGATCGATCTTGA 1538 PR 18-JUN-1999; 9905-0139454.
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 AAC5024 AAC5024 standard; DNA; 1853 BP. PR 18-JUN-1999; 9905-0139456.
 XX AC AAC5024; PR 18-JUN-1999; 9905-0139457.
 XX DT 18-OCT-2000 (first entry) PR 18-JUN-1999; 9905-0139458.
 DE Arabidopsis thaliana DNA fragment. SEQ ID NO: 64036. PR 18-JUN-1999; 9905-0139460.
 XX KW Hybridisation assay; genetic mapping; gene expression control; PR 18-JUN-1999; 9905-0139461.
 KW protein identification; signal transduction pathway; PR 18-JUN-1999; 9905-0139462.
 KW metabolic pathway; promoter; termination sequence; ss. PR 18-JUN-1999; 9905-0139463.
 S Arabidopsis thaliana. PR 18-JUN-1999; 9905-0139464.
 XX PN EP1033405_A2. PR 18-JUN-1999; 9905-0139465.
 XX PD 06-SEP-2000. PR 18-JUN-1999; 9905-0139466.
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Query Match, 61.7%; Score 903.4; DB 21; Length 1853;
 Best Local Similarity 77.4%; Pred. No. 1.1e-251; Matches 1128; Conservative 0; Mismatches 311; Indels 18; Gaps 2;

Qy 23 TACAGATCCGGACCAAACTACGGTCAAGCTGGTATACATCTGATCAGCTTCTGTT 82
 Db 252 TACAAAGGCTCAACTGAGAACTGGTCAAGCTGGTATACATCTGATCAGCTTCTGTT 311
 Qy 83 TTAAGCTCTGTTCTCCCTTAAGGGCTTGTGTTCTGAGTCTCTTGTAAAGCC 142

Db 312 TCAAGGCTGTTGTTCCATTAAGGGGTTTACTCACAGAGATCTCTGATTAACAA 371
 Qy 143 TAAACCA-----CTTCAGCTCTATACAACTCCCGGATTCATCTCG 187
 Db 372 CAGCGACTTCTACCGATGGCTTCAGCTCCATACAACTCCGGTCTGCTTCATCTTC 431
 Qy 188 TCATTAATCTGCCATTGTCGATCATTTGTTCTTCATGTCGACCTAGATCATCT 247
 Db 432 TCTCTGTTAGCTACTCTTGGCTCACCGTTACATCATGAGCTGTCAGATCTGTT 491
 Qy 248 ACCTCTGATTACCTGTTACCCGGCTTCACTGAAAGTTAGGAAATTTAGGAAAT 307
 Db 492 ATCTCGTTGATACCTGTTATCTCTCGTGGAGCTTCAGGTTAGTACAGACT 551
 Qy 308 TCATGACAACCTCTGTTGTTGTCAGATTCAGATTCAGSGAAACTTCCTGTTAGTCCAGAGSA 367
 Db 552 TTATGATCATTCTGTTAGTGAAGATTCATGAGTCATCTGTTAGGTTAGAGGA 611
 Qy 368 AGATCTGATGCGCTGGCTGGCTGGAGACTTATTCACGGATCTTACCTCTA 427
 Db 612 AGATCTGAGCTGCTCTGGTTAGGAGACTATCTCCCTGAGAAGCTTTCATGTA 671
 Qy 428 TCCCTCGCCCTCTACTGCTGAGCGGTGAGAAGGGAGGAGCTTGG 487
 Db 672 TCCCTCGCGAGCTCTGAGATGATGATGGGGCTGTTAGGAGAATCTGG 731
 Qy 488 CACTGACAACTTTGAGATAACAAATCAACATCTAGGGAGATTTGGTCTGTG 547
 Db 732 CTCTCTGATACTGTTGAGAACCTCTGTTACCCCTGGATTTGGTCTGTG 791
 PR 732 CTCTCTGATACTGTTGAGAACCTCTGTTACCCCTGGATTTGGTCTGTG 791
 Qy 548 TGAATTTGAGTTGTTAACCTAGCCCTTCTTATCCCGCCTGATTTGTAACAGTATA 607
 Db 792 TGAATTTGAGTTGTTAACCTCTGAGAACCTCTGTTACCCCTGGATTTGGTCTGTG 851
 Qy 608 AGCTTGTAGAGAACTTAAGAGCTTAACTCTGGAGGATGGATTTGCGCTGTA 667
 Db 852 AGCTTGTAGAGGAATTTAGAGTTAACTCTGGATGGATGGGTTAGTGGTGTGTA 911
 Qy 668 TCGGGTACATCTGACTGATGATGATGTTACAACTCATAGAACACTTGTG 727
 Db 912 TCTCTGATGTTGAGCTTACGTTAACTGAGCTTGTGTTGAGCTTGTG 971
 Qy 728 TTACTGAGACATCTCAGAATTGTTGGTAAACAGAACCAATGTTGATCC 787
 Db 972 TTAGTACTGAGAACATTCTCAGATGTTGTTGGATATAGAGCTTGTGATTC 1031
 Qy 788 CTAATGCTGTTGAGTTGAGTTGTTGTTGGCTCGCGGTTCTTGTGAGACAGCCCTTGATC 847
 Db 1032 CGATTTGTTGTTGTTGTTGAGCTTGTGTTGAGCTTGTGAGACAGGGAAAGTC 1091
 Qy 848 GAAAGCTGATGAGCTATAGCTGTTGTTGAGCTTGTGTTGAGCTTGTGAGACAGGGAAAGTC 907
 Db 1092 GTAGCTGGCTCTAATGAGCTGTTGTTGAGCTTGTGAGACAGGGAAAGTC 1151
 Qy 908 ACGCATTCATGTTGTTGAGACAGAGTGTGTTGAAACGGAGTTCTTGT 967
 Db 1152 AGGCTTCACTGTTACCAAGGAGCTGATATGGAGAACGGGGTTCTGT 1211
 Qy 968 CTAAGATCTATGGCTATAGCTGGAGAGCTTAAAGACGAATATCACTCTGGTC 1027
 Db 1212 CGAAAGCTTATGGCTATAGCTGGAGAGCTTAAAGACGAATATCACTCTGGTC 1271
 Qy 1028 CTCCTGTTCTCTCTATAGTGGAGCTTGTGAGCTTGTGAGACAGGGAAAGTC 1087
 Db 1272 CTCCTGTTCTCTCTATAGTGGAGCTTGTGAGCTTGTGAGACAGGGAAAGTC 1331
 Qy 1088 TGTGTTGAGCTGAGAGGAACTACACGGATTCAAGCTGCTTGTGTTAGTCATT 1147
 Db 1332 TGTGTTGAGCTGAGGCTTACGTTGAGCTGTTGAGCTGCTTGTGAGCTT 1388
 Qy 1148 TCGTGTATCAGGGGGAGGAGCTGAGCTGAGCTGAGCTGAGCTGAGCTT 1207

Query Match 61.6%; Score 901.2; DB 20; Length 1611;
 Best Local Similarity 77.5%; Pred. No. 4.3e-251;
 Matches 1124; Conservative 0; Mismatches 308; Indels 18; Gaps 2;

Matches 1124; Conservative 0; Mismatches 308; Indels 18; Gaps 2;

OY 1208 CTCCAAACATCTGAGGCCCTAGATGACTTGTGATGAGCTTGAGAAGAACTCTGCCTTA 1267

Db 1449 CCCAGACTCAGTCGAGGCATCCAGATGACAGTCGACAGATGGAAACACTCTCGA 1508

OY 1268 GCTCTATATGGTGAATGGCTTACCGAGCTAAGGAAAGAATGGAAAGAAC 1327

Db 1509 GCGCGATTTGGATGAACTGGCTTACATAGAGCTTAAGTAGGTAGAGAAAGAAC 1568

Db 1328 GAGTTGGCAGATGGCTTGTAGGGTTAAGGTAAGCTGGAAAGCAGCTGGCTC 1387

OY 1569 GCGTTGGCAGATGGCTTGTAGGGTTAAGGTAAGCTGGAAAGCAGCTGGCTC 1628

Db 1388 TTGCAATGCGAGCCCTGGTAAACATCTGGACATTCGATCCATAGATACCG 1447

OY 1629 TAACAACTGCAAGCCCTGGTAGTAGTCGCTGGGACACTGCAATCGAC 1688

Db 1448 TTAGATGGAATCTGA 1464

OY 1689 TTAGCTGGACTCTGA 1705

RESULT 5

AAX23221 AXAAGCTTACATGAAATACGGCAAGCTGGATATCTGATCTACATCTCT 220

TD AAX23221 standard; DNA: 1611 bp.

XX AAX23221;

AC 11-JUN-999 (first entry)

XX DT 11-JUN-999 (first entry)

XX DE A. thaliana EL5 DNA.

XX EL5; very long chain fatty acid; VLCFA; beta-keto acyl synthase; plant; vegetable oil; lubricant; fuel; feedstock; plastic; cosmetic; pharmaceutical; edible oil; ss.

XX KW Arabidopsis thaliana.

XX OS WO854954-A1.

XX PD 10-DEC-1998:

XX 01-JUN-1998; 98WO-US11384.

XX 03-JUN-1997; 97US-0868373.

XX (CRGI) CARGILL INC. (JAWO/ (POST/ (TODD/ (TODD/ JAWORSKI J G. POST-BEITENMILLER MA. Todd J. DR WPI: 1999-070227/06. DR PSDB; AAW93431.

XX New isolated beta-keto acyl synthase polynucleotides - used particularly for the production of transgenic plants having altered levels of very long chain fatty acids in tissues

XX Claim 9; Fig 11; 76pp; English.

This invention describes the isolation of beta-keto acyl synthase proteins from Arabidopsis thaliana. The products of the invention can be used for producing vegetable oils having elevated levels of very long chain fatty acids (VLCFA) for use as e.g. lubricants, fuels and as a feedstock for plastics, pharmaceuticals and cosmetics. The products can also be used for producing oils having reduced levels of VLCFAs for use as edible oils. This sequence encodes EL5.

XX Sequence 1611 BP; 413 A; 288 C; 382 G; 528 T; 0 other;

Query Match 61.6%; Score 901.2; DB 20; Length 1611;
 Best Local Similarity 77.5%; Pred. No. 4.3e-251;
 Matches 1124; Conservative 0; Mismatches 308; Indels 18; Gaps 2;

Matches 1124; Conservative 0; Mismatches 308; Indels 18; Gaps 2;

OY 23 TACAGTCCGACCCAAACTACGGCTAACGTTAGCTTACTATCTGATCACTCCTT 82

Db 161 TACAGGCTAACATGAAATACGGCAAGCTGGATATCTGATCTACATCTCT 220

OY 83 TAAACTCAGTTCCMCCCTCTAATGGCTTGTTCAGTAATGCTCATGTTAAGCC 142

Db 221 TCAAGCTGTTGGTCCATTAATGGGGTTTATGCAAGAGATCTCAGTAAACAA 280

OY 143 TAAACAT-----CTTCAGGCTTACATTCACCGGATTCATCTCG 187

Db 281 CAGACATCTTACCGATTTGGCTATCCAAACATCTCGTCTTCATCTTC 340

OY 188 TCAATCTCGCCATGTCGGATCATGTCCTCTCATGTCGACCTAGTCATCT 247

Db 341 TCTCTCTTAACTACTCTGCTACCTCCACCGTTACATCAGTGTGCTCCAGATCTGTT 400

OY 248 ACCTCTAGATTAACCTGCTACCTCCACCGTTACATCAGTGTGCTCCAGAAT 307

Db 401 ATCTCTGTTACACTCTGTTATCTCTCCGGAGAGCTCAGTTAAGTATAGAAGT 460

OY 308 TCTATGACACACTCTAATGTTGAACTGAGAACACTCTCTGAGTCAGAG 367

Db 461 TTATGATCATCTAATGTTGATGAGATTCATGTTCTAGTTCTAGGAGGA 520

OY 368 AGATCTGATTGCTCTGGTCCTGGGAGAGACTTATTCGGGTTATTCTACCTA 427

Db 521 AGATTCTTGAACGTTCTGGTTAGGAAGAGACTATCTCCCTGAGCTTACCTGTA 580

OY 428 TCCCTCCGGCTCTACTATGGCTCGAGGAGGCTGAGCTGAGGCTGTTCTGGTG 487

Db 581 TCCCTCGAGGCTTACATGATGAGGGCCCTCGAGGATCTGAGGCTGTTCTGGTG 640

OY 488 CACTCGACATCTTGGAGAAATACAGAAACATCTGGAGGAGTGGCTTCTGG 547

Db 641 CTCCTGTTACAGTTGAGAAATACAGAAACATCTGGAGGAGTGGCTTCTGG 700.

OY 548 TGAATGTTAGTTGTTAACCTACCGCTCTTATTCGGCATGATGTTAACAGATA 607

Db 701 TGAATGTTAGCTTGTGTTAACCTACCGCTCTTATTCGGCATGATGTTAACAGATA 760

OY 608 AGCTTAGGGAAACATTAAGACCTTAACTTGGAGGAAATGGATTTAGTCCTGGGTTA 667

Db 761 AGCTTAGGGAAATTTAGGTTAACCTTACCTCTGGGATTTAGTCCTGGGTTA 820

OY 668 TCGGGTAGCTCAGCTAGTGAATGTTACAAATCCATGAGAACACTTCTGGTGG 727

Db 821 TCCCTATGTTAGCTAAGATATGTTGCAAGTTCTAGTGTGTTAACAGATA 880

OY 728 TTAGTACTGAGAACATCTCAGATGGTTGAGCTTACAGAAAGAACATGTTGATCC 787

Db 881 TTAGTACTGAGAACATCTCAGATGGTTGAGCTTACAGAAAGAACATGTTGATCC 940

OY 788 CTAAATGCTGTTAGCTGGGTTCCGGGCTCTGCTTCGAGAACGGCTTGTGATC 847

Db 941 CGATTTGTTGCTGTTGCTGTTGAGCTGGGATTTGTTGCGAGAACGGGAAGATC 1000

OY 848 GAAAGATCCAAGTATAGCTGTTAACGGTCAAGACTATAAGGATGTGAGA 907

Db 1001 GTAGACGGCTTAAGTATAGCTGTTGAGCTAACGGTCAAGACTCTGGT 1060

OY 908 ACGGATCAATGTTGCTGAGCTAACAGACAGATGAGCTGTTGAAACGGGTTCTGGT 967

Db 1061 AGCTTCAACTCTGTTACCAAGCAAGCTGTTAGTCGAGCTGGGTTCTGGT 1120

OY 968 CTAAGATCTATGGCTATAGCTGGAGAGCTTAAGACGAACTCTGGT 1027

Db 1121 CGAAAGCTTAACTGCTATAGCTGGGAGCTTCTGGGAGATCTACTTGTGTC 1180

OY 1028 CTCCTGGTCTTCCTAAGCGAGCAAGATCTGTTCTGGGAGTTCTGGTAAAGAT 1087

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PR	22-JUL-1999; 99US-0145145.	PR	21-OCT-1999; 99US-0160815.		
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PR	23-JUL-1999; 99US-0145224.	PR	22-OCT-1999; 99US-0160989.		
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PR	06-AUG-1999; 99US-0147303.	PR	06-AUG-1999; 99US-0147416.		
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PR	10-AUG-1999; 99US-0148171.	PR	11-AUG-1999; 99US-0148319.		
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PR	20-AUG-1999; 99US-0149723.	PR	20-AUG-1999; 99US-0151066.		
PR	27-AUG-1999; 99US-0149902.	PR	23-AUG-1999; 99US-0151303.		
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PR	13-SEP-1999; 99US-015418.	PR	15-SEP-1999; 99US-015438.		
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PR	22-SEP-1999; 99US-0155486.	PR	27-AUG-1999; 99US-0155659.		
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PR	08-OCT-1999; 99US-0158232.	PR	12-OCT-1999; 99US-0159365.		
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PR	21-OCT-1999; 99US-0160767.	PR	21-OCT-1999; 99US-0160768.		
PR	21-OCT-1999; 99US-0160770.	PR	21-OCT-1999; 99US-0160814.		
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PR	22-OCT-1999; 99US-0160981.	PR	22-OCT-1999; 99US-0160989.		
PR	25-OCT-1999; 99US-0161404.	PR	25-OCT-1999; 99US-0161405.		
PR	25-OCT-1999; 99US-0161406.	PR	26-OCT-1999; 99US-0161359.		
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PR	28-OCT-1999; 99US-0161920.	PR	28-OCT-1999; 99US-0161921.		
PR	28-OCT-1999; 99US-0161921.	PR	28-OCT-1999; 99US-0161932.		
PR	29-OCT-1999; 99US-0162142.	PR	29-OCT-1999; 99US-0162142.		
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Best Local Similarity	77.3 %;	Pred. No. 9.4e-248;	Matches 1126;	Conservative 0;	Mismatches 312;
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QY	23 TACAGTCCGACCCAAACTACGTCAGCTGGTTATCACTATCTGATCACTGACTTT	82	QY	83 TAACTCACTGTTCCGCCCTTAATGGCTGTTGTCATGAGTCCTCATGTTAAGGCC	142
Db	314 TCAAGCTCTGTTGGTCCATTAATGCGGTTAGCAGACCTCTGATCATCTCT	313	Db	314 TAAACAT-----CTCAGCTTATACATTCCACGGATTCTATCTCTCG	187
QY	143 TAAACAT-----CTCAGCTTATACATTCCACGGATTCTATCTCTCG	433	QY	374 CAGACCATCTTACCGATTTGCGCTCATCTCAAATCACACTGCTTGCTTCATCTC	433
Db	494 ATCTCGTGTGATCTGTTCTCTCGGAGGCTGGCTCATGTTAGTATGATGAACT	553	Db	368 AGATCTGATGCTGTTGCTCGGGAGAGACTATTACCGGATTCTCATCT	427
QY	308 TCATGACAACTCTAGTTGATCAGATTCAGCCAACTCTCTGAGTCAGAGACTT	673	QY	614 AGATCTGAACTGTTCTCGGTTAGGAGAGACTTATCTCCCTGAGCTTACATGTA	673
Db	434 TCTCTGTTAGCTCTGTTAGTCTGACGAGCTTGTGAGCTTACGAGGAACT	493	Db	554 TATGATCATCTAATGATGAGATTCAGAGTCAGAGTCATTTAGTTAGCTGAGGA	613
QY	248 ACCTCTGATGATCTGCTGACCTCCCGCTCGAGCTGCTGAGCTGAGGAT	307	QY	428 TCCCTCCGGCTCTACGATGCTGAGCTGAGCTGAGGAGGGATCTGAGGAT	487
Db	674 TCCCTCCGGCTCTACGATGCTGAGCTGAGCTGAGGATCTGAGGAT	733	Db	674 TCCCTCCGGCTCTACGATGCTGAGCTGAGGATCTGAGGAT	733
QY	488 CACTCGACATCTTTCGAGATAACAAATCACTCTAGGAGATGGGGTCTGTG	547	QY	548 TGAATGTTAGTTGCTTAACCTACGGCTCTTACGCCATGATGTTACAGATA	607
Db	734 CTCCTGATAAGCTTACGATGCTGAGCTGAGGATCTGAGGAT	793	Db	794 TGAATGTTAGCTGTTACCTACGCTCTGAGCTGAGGATCTGAGGAT	853
QY	608 AGCTTGTGAGCTGTTACGATGCTGAGCTGAGGATCTGAGGAT	667	QY	854 AGCTTGTGAGGAACTGTTACGATGCTGAGCTGAGGATCTGAGGAT	913
Db	914 TCTCTGATGATCTGTTAGAGTCAAGATGCTGAGGATCTGAGGAT	973	Db	668 TCGGGTAGATCTGATGATGTTACCTGGAGATGGGTAGCTGGGTTA	727
QY	728 TTGACTCTGAGAACATCACTCAGATGTTACCTGGAGATGGGTAGCTGG	787	QY	974 TTGACTCTGAGAACATCACTCAGATGTTACCTGGAGATGGGTAGCTGG	1033
Db	788 CTAACTGCTGTTAGAGTGGTGGTTCGGGTTCTTCGAGAACCTTGATC	847	QY		

Db 1034 CGATTGTTGTTGGTTGGGATTTGTTGTCGACAAAGGGAAAGTC 1093 PA (JAWO/) JAWORSKI J G.
Qy 848 GAAACCATCCAGTAAAGCTGTGTCATAGGTCAAGACTCATAAAGGTCTGTGAGA 907 PA (POST/) POST-BEITENMILLER MA.
Db 1094 GTAGACGCTCTAAGTAAAGCTGTGTCATACGGTAAAGGTCTGTGAGA 907 PA (TODD/) TODD J.
Db 908 AGCATCAATGTTGCTATCGAACAGATGAGTTGAACACGGAGTTCTGT 967 PI JAWORSKI JG, Post-Beitenniller MA, Todd J;
Qy 1154 AGGCTTCACTTCAAGTGTACCGTAAAGCTGTGTCATACGGTAAAGGTCTGTGAGA 1153 XX
Db 968 CTAAAGCTTAAAGGTATACCTGGAGAAGCTTTAGGAAATACGGTAAAGGTCTGTGAGA 1153 DR WPI: 1999-070227/06.
Qy 1028 CTCTGGTCTCTCTATAAGGGAGATCTGTTGTTGACTTTGCTAAAGAT 1087 DR P-PSDB; RAW93433.
Db 1214 CGAAAGCTTAAAGGTATACCTGGAGAAGCTTTAGGAAATACGGTAAAGGTCTGTGAGA 1213 PT New isolated beta-keto acyl synthase polynucleotides - used particularly for the production of transgenic plants having altered levels of very long chain fatty acids in tissues
Qy 1148 TCTGTTACCGCGGAGTGTAGCAGATCTGTTGCTAAAGGTAAAGCTT 1273 PT XX
Db 1391 TCTGTTACCGCGGAGTGTAGCAGATCTGTTGCTAAAGGTAAAGCTT 1207 PT XX
Qy 1208 CTCCAAACATGTTGAGGAAAGCTTACCCGATTCAGCTTCAAGCTT 1147 PT XX
Db 1334 TGTGTTAACTGAGCTGAGCTTACCGGAACTGTTCAAGCTT 1390 PT XX
Qy 1148 TCTGTTACCGCGGAGTGTAGCAGATCTGTTGCTAAAGGTAAAGCTT 1273 PT XX
Db 1268 GCTCTATATGGTCAACGGAACTGCTTACAGGAAATGGAAAGAAC 1450 PT XX
Qy 1511 GCTCGATTGTTGTTGAACTGGCTTACAGGAAATGGAAAGAAC 1267 PT XX
Db 1451 CGCAGACTCTAGTCGAGGATCGAGAAAGACATGCAAGTGGTAAAGCTT 1510 PT XX
Qy 1571 GGGTTGGAGATGCTTGGAAAGTGTGAGTTGGTAAAGCTTCAAGCTT 1387 PT XX
Db 1328 GAGTTGCGAGATGCTTGGAAAGTGTGAGCTTAAAGTGTAAAC 1630 PT XX
Qy 1388 TTCCGAATGTCGACCCCTGGTAAACATTCCTGGACATTCATGAGA 1447 PT XX
Db 1631 TAACAAATGTCAG-CTTGGTTAGTAGTCCTGGGAAACATGCACTGACCGATATCGG 1689 PT XX
Qy 1448 TAAAGATGATCTTGA 1464 PT XX
Db 1690 TTAAGCTGACTCTGA 1706 PT XX

RESULT 7

AX23223

ID AAX23223 standard; DNA; 1548 BP.

Qy 306 ATTCATGAAACACTCTAGTTGATTGAGATTCAGCAACCTCTCTGACTTCCAGAG 365 PA (POST/) POST-BEITENMILLER MA.
Db 396 GTCTCTGGACATCTCTAGCTACCTACGGGGATTCGAGCTCTGCTCTGAGTCACG 455 PA (TODD/) TODD J.
Qy 366 GAGACTGTGATTGCTCTGGTGAAGAGACATTTACCGGATTCTACTC 425 PA (JAWO/) JAWORSKI J G.
Db 456 CAAGCTCTGAGCTTCTGGGAGACATATGCTCTGAGCTGATTCACCGTAC 395 PA (POST/) POST-BEITENMILLER MA.
Qy 426 TATCCCTCGCGTCTACTATGCTGAGATCAAATCACTCTGGGAGATGGGAGATCTCGG 485 PA (TODD/) TODD J.
Db 516 TGTCTCTGGACATCTCTAGCTACCTACGGGGATTCGAGCTCTGCTCTGAGTCACG 575 PA (JAWO/) JAWORSKI J G.
Qy 486 TGCACCTGACAACTCTTGAGAATCAAATCACTCTGGGAGATGGGAGATCTCGG 545 PA (POST/) POST-BEITENMILLER MA.
Db 576 TGTCTCTGGACATCTCTAGCTACCTACGGGGATTCGAGCTCTGCTCTGAGTCACG 635 PA (TODD/) TODD J.
Qy 546 TGTGAAATGTTGAGCTTAAACCTACGGGCTCTTATCCCGATATGTTAACAGTA 605 PA (JAWO/) JAWORSKI J G.
Db 636 TGTGAAATGTTGAGCTTAAACCTACGGGCTCTTATCCCGATATGTTAACAGTA 695 PA (POST/) POST-BEITENMILLER MA.
Qy 606 TAAGCTTAACTGAGCTTAAACCTACGGGCTCTTATCCCGATATGTTAACAGTA 665 PA (POST/) POST-BEITENMILLER MA.
Qy 696 TAAGCTTAACTGAGCTTAAACCTACGGGCTCTTATCCCGATATGTTAACAGTA 755 PA (CRGI) CARGILL INC.

EL7; very long chain fatty acid; VLCFA; beta-keto acyl synthase; plant; vegetable oil; lubricant; fuel; feedstock; plastic; cosmetic; pharmaceutical; edible oil; ss; Arabidopsis thaliana.

XX DE A. thaliana EL7 DNA.

XX KW EL7; very long chain fatty acid; VLCFA; beta-keto acyl synthase; plant; vegetable oil; lubricant; fuel; feedstock; plastic; cosmetic; pharmaceutical; edible oil; ss.

XX KW WO9854954-A1.

XX PD 10-DEC-1998.

XX FF 01-JUN-1998; 98WO-US11384.

XX PR 03-JUN-1997; 97US0868373.

XX PA (CRGI) CARGILL INC.

OY	666	TATCGCGGTAGATCTAGCTAGTGTGATGATGACAATCCATAGAACACTTGTGCTCTGT	725	PN	EP1033405-A2.
Db	756	TATCGCTGGGACTCTGCTTAAAGACGTGTGTGTTACATAGAACACTTGTGCTCTGT	815	XX	06-SEP-2000.
OY	726	GTTTAACTGAACTGAAACATCTCAGATTGTTATTGTTGGTACAGAACAACTGTTGAT	785	XX	25-FEB-2000; 2000EP-0301439.
Db	816	TGTTTCACTGAGAACATTACTCAGATTGTTATTGTTGGTACAGAACAACTGTTGAT	875	PR	25-FEB-1999;
OY	786	CCCTAAATTGCTGTTGAGCTGGTGTGCGGTTCTCTTGGTACAGAACAACTGTTGAT	845	PR	05-MAR-1999;
Db	876	ACCGAACCTGCTGTTGAGCTGGTGTGCGGTTCTCTTGGTACAGAACAACTGTTGAT	935	PR	09-MAR-1999;
OY	846	TCCGAAACGATCCAAAGTAACTGCTGTTGAGCTGGTGTGCGGTTCTCTTGGTACAGAACAACTGTTGAT	905	PR	09-MAR-1999;
OY	996	TAAGCTTCCGTTGGTATAGCTGAGGTTAAAGGAAATCTCTCTCTG	1055	PR	01-APR-1999;
Db	936	CAAGAGACGCTTAAGTACCTAGCTACGGTGTACATGCTAGTCAGACTCACCGTGAGATGA	995	PR	06-APR-1999;
OY	906	GAACGCATTCAATGTTGTTGATCAAGAACAGATGAGCTTGTAACACCGAGTTCTT	965	PR	08-APR-1999;
Db	1055	GTCCAAGAGCTTAATGGGATTCAGGGAACTCTCAAACCAATCTACATCTG	1115	PR	16-APR-1999;
OY	1026	TCCCTCTGGTCTCTCTATAAGCAGCAGATCTGTCCTTGCGACTTTGTGCTAAGAG	1085	PR	19-APR-1999;
Db	1116	TCCCTCTGCTCTACCGATAGTGTAGGAGCATTCCTCTTGTACTCTGTTGAGA	1174	PR	29-MAR-1999;
OY	1085	ATTTGTTCAATGAGAAAGGAGAGGAGCTTACATACCGGTTACAGCTGTTAGATCA	1145	PR	23-APR-1999;
Db	1175	-AGCTCTTAACCGTAAAGTGAACCGTATACCCGGATTCAACTGCTTCGAGCA	1232	PR	05-MAY-1999;
OY	1146	TTCTGTATTCACCGGGGGTAGAGCGCTGTGTTGAGCTAGAGAGAATTAAGCT	1205	PR	06-MAY-1999;
Db	1233	TTTCGTTATCCATGCTGGTGAAGAGCTGTGATGATGAGTTAGAGAAGAATCTGCCT	1292	PR	07-MAY-1999;
OY	1206	TTCTCCAAACATGTGAGGGCTCTAGAATGACTTGTGCTATGTTGAAACACTCTC	1265	PR	11-MAY-1999;
Db	1293	TTCACCGAGTCATGCGAGCTTGAGGATGACTCTCATCGATTGTTACATCTC	1352	PR	14-MAY-1999;
OY	1266	TAGCTCTATAGTGGTATGATGTTACCGGAGCTAAAGGAGAATGAGAAGAA	1325	PR	18-MAY-1999;
Db	1353	GAGCTCATTTGGTATGAAATGCTTACATGAGCGAAAGGAGAGCTCGAAAGGTTA	1412	PR	20-MAY-1999;
OY	1326	CAGAGTTGCGAGATGCTTGTGTTAGCGGGTTAACGCGCTAACCGCGGTTGGTGGC	1385	PR	21-MAY-1999;
Db	1413	TCGTGTTGGCAATCGCGTTCGGAAAGTGGTATTAACTTAATGCGGATTGGAAAGC	1472	PR	24-MAY-1999;
OY	1446	TCTTGGCAATGCGGCCCTGGTAAACAACTCTGGACATGTCATCATATCTC	1445	PR	25-MAY-1999;
Db	1473	ATTAAGGCATGTAACCTTGAAACACACAGCTCTGGAGATGTTGACAGTATCC	1532	PR	27-MAY-1999;
OY	1533	GGTTA 1450		PR	08-JUN-1999;
Db	1533	GCTAA 1537		PR	01-JUN-1999;
RESULT 8				PR	03-JUN-1999;
AAC39559				PR	04-JUN-1999;
ID AAC39559		standard; DNA; 1819 BP.		PR	05-JUN-1999;
XX				PR	07-JUN-1999;
AC				PR	08-JUN-1999;
XX				PR	10-JUN-1999;
DR		17-OCT-2000 (first entry)		PR	10-JUN-1999;
XX				PR	14-JUN-1999;
Arabidopsis thaliana		DNA fragment SEQ ID NO: 25077.		PR	16-JUN-1999;
XX				PR	16-JUN-1999;
KW		Hybridisation assay; genetic mapping; gene expression control;		PR	18-JUN-1999;
KW		protein identification; signal transduction pathway;		PR	18-JUN-1999;
KW		metabolic pathway; promoter; termination sequence; ss.		PR	18-JUN-1999;
OS		Arabidopsis thaliana.		PR	01-JUL-1999;

PR	01-JUL-1999;	99US-014154	PR	20-SEP-1999;	99US-0154779.
PR	02-JUL-1999;	99US-0142055.	PR	22-SEP-1999;	99US-0155139.
PR	06-JUL-1999;	99US-0142390.	PR	23-SEP-1999;	99US-0155486.
PR	08-JUL-1999;	99US-0142803.	PR	24-SEP-1999;	99US-0155659.
PR	12-JUL-1999;	99US-0142977.	PR	28-SEP-1999;	99US-0156458.
PR	13-JUL-1999;	99US-0143542.	PR	29-SEP-1999;	99US-0155956.
PR	14-JUL-1999;	99US-0143624.	PR	01-OCT-1999;	99US-0157117.
PR	15-JUL-1999;	99US-0144005.	PR	05-OCT-1999;	99US-0157753.
PR	16-JUL-1999;	99US-0144085.	PR	06-OCT-1999;	99US-0157865.
PR	17-JUL-1999;	99US-0144086.	PR	07-OCT-1999;	99US-0158029.
PR	19-JUL-1999;	99US-0144325.	PR	08-OCT-1999;	99US-0158232.
PR	19-JUL-1999;	99US-0144331.	PR	12-OCT-1999;	99US-0158369.
PR	19-JUL-1999;	99US-0144332.	PR	13-OCT-1999;	99US-0159293.
PR	19-JUL-1999;	99US-0144333.	PR	14-OCT-1999;	99US-0159294.
PR	19-JUL-1999;	99US-0144334.	PR	13-OCT-1999;	99US-0159295.
PR	20-JUL-1999;	99US-0144335.	PR	14-OCT-1999;	99US-0159329.
PR	20-JUL-1999;	99US-0144352.	PR	14-OCT-1999;	99US-0159330.
PR	20-JUL-1999;	99US-0144632.	PR	14-OCT-1999;	99US-0159331.
PR	21-JUL-1999;	99US-0144884.	PR	14-OCT-1999;	99US-0159637.
PR	21-JUL-1999;	99US-0144884.	PR	13-OCT-1999;	99US-0159638.
PR	21-JUL-1999;	99US-0145086.	PR	18-OCT-1999;	99US-0159584.
PR	22-JUL-1999;	99US-0145088.	PR	21-OCT-1999;	99US-0159741.
PR	22-JUL-1999;	99US-0145085.	PR	21-OCT-1999;	99US-0160767.
PR	22-JUL-1999;	99US-0145087.	PR	21-OCT-1999;	99US-0160768.
PR	22-JUL-1999;	99US-0145089.	PR	21-OCT-1999;	99US-0160814.
PR	22-JUL-1999;	99US-0145192.	PR	21-OCT-1999;	99US-0160815.
PR	23-JUL-1999;	99US-0145195.	PR	22-OCT-1999;	99US-0161359.
PR	23-JUL-1999;	99US-0145218.	PR	22-OCT-1999;	99US-0160981.
PR	23-JUL-1999;	99US-0145224.	PR	22-OCT-1999;	99US-0160989.
PR	26-JUL-1999;	99US-0145226.	PR	25-OCT-1999;	99US-0161404.
PR	27-JUL-1999;	99US-0145913.	PR	25-OCT-1999;	99US-0161405.
PR	27-JUL-1999;	99US-0145913.	PR	25-OCT-1999;	99US-0161405.
PR	27-JUL-1999;	99US-0145919.	PR	25-OCT-1999;	99US-0161405.
PR	28-JUL-1999;	99US-0145951.	PR	26-OCT-1999;	99US-0161359.
PR	02-AUG-1999;	99US-0146586.	PR	26-OCT-1999;	99US-0161360.
PR	02-AUG-1999;	99US-0146588.	PR	26-OCT-1999;	99US-0161361.
PR	03-AUG-1999;	99US-0146589.	PR	28-OCT-1999;	99US-0161920.
PR	03-AUG-1999;	99US-0147038.	PR	28-OCT-1999;	99US-0161920.
PR	04-AUG-1999;	99US-014704.	PR	29-OCT-1999;	99US-0161993.
PR	05-AUG-1999;	99US-0147102.	PR	29-OCT-1999;	99US-0162142.
Query Match					
Bet	Local Similarity	48.2%	Score	706.2;	DB 21; Length 1819;
Matches	1007;	Conservative	69.7%	0;	Mismatches 418; Indels 20; Gaps 3;
QY	21	TGTCAGATCGGACCCAAAATAGTCAGCTGGTTACATCTGACTCACT	Db	80	80
Db	231	TCTCCAGAGGGTGAATCTCAGTGTAGTGAATATTAGTTACATCTGACTCACT	Db	290	290
QY	81	TTAACTCATGTTCTCCCTTAATGGCTTTGTCTCATGATGTCCTCATGTTAAG	Db	140	140
Db	291	CTGACTCTCTGTTATCCCTCTCGCGTTACTCGTCGAGGCCCTCAGATGA	Db	350	350
QY	141	CTCATGACTCTT-----CAGCTCTTCAATGCCCGGATTCATCT	Db	195	195
Db	351	CCCATGATGATCTAACAGCTCTGGATCCATCACATACATCTGGTTAGTACATCAT	Db	410	410
QY	186	CGTCATTACTCTCCATGTCGATCCATGTCCTCTCATGTCGACTGATCCAT	Db	245	245
Db	411	CTGTCAGGGATCTAGCTTCTGGTTACGGTTATGTTACGACCCGACTGACCGT	Db	470	470
QY	246	CTACCTCTGAGATCTACTCTGCACTCCGGCTTCGACTCAAAAGTTACAGAA	Db	305	305
Db	471	TTACTGGTGTATCTCTGTCATCTCCACCTGATCATHCAAAGCTTACGCTCG	Db	530	530
QY	306	ATCATGACACTCTAGTTGATCAGATTCAGCAACTCTCTGAGTCAGAG	Db	365	365
Db	531	GTCTCATGGACATCTAGACTCACCGGGATTCGAGTACTCTGCTCTCGAGTTCAAG	Db	590	590
QY	366	GAGATCTGATTCGCTCTGGTCGGTGAAGAGACTTATTCACGATTCTGATCTTAC	Db	425	425
Db	591	CAAGATCTGGGCTTCGAGTACCTGAGCAACCTGAGCTGAGTCAGAG	Db	660	660

QY	TATCCCTCCCGCTTACTATGGCTGAGGGCTGAGAGAGCGCAGGTTAATCTCGG 485	RESULT	9
Db	649 TGTTCACCGAGAAATTCAAGGGCTGCTGAGACAGTCATGTTGG 708	AAU27036	AAU27036 standard; cDNA; 1641 BP.
QY	486 TGCACCTGAGACATCTTCCAGATAACAAATCATCCCTAGGAGATTTGGATCTGT 545	XX	XX
Db	709 TCTTGTAGATACTTTCGCTTAACACTAAATGAAACCAAGGATTTGGATCTGT 768	AAU27036;	14-OCT-1996 (first entry)
QY	546 TCTGAATTTGTTGTTGTTAACCTTACGGCTCTATGCCATGATGTTAACAGTA 605	XX	Arabidopsis fatty acid elongation gene FAEL; transgenic plant; seed oil; fatty acid elongation gene; FAEL; transgenic plant; seed oil; vegetable oil; Brassica napus; canola; oilseed rape; elcosenoic acid; erucic acid; antisense; ss.
Db	769 TCTGAATTTGTTGTTGTTAACCTTACGGCTCTATGCCATGATGTTAACAGTA 828	XX	Arabidopsis thaliana ecotype ws.
QY	606 TAACTTAGAGAACATTAAAGAGCTTAACTTGGAGGATGGATGGATGGCTGGT 665	KW	Arabidopsis thaliana ecotype ws.
Db	829 TAACTTAGAGAACATTAAAGAGCTTAACTTGGAGGATGGATGGCTGGT 888	OS	Arabidopsis thaliana ecotype ws.
QY	666 TATCGCGTAGTCTACTAGTGTAGATGTTAACATCATAGGAACACTTGTCTGT 725	XX	Arabidopsis thaliana ecotype ws.
Db	889 TATCGCGTAGTCTACTAGTGTAGATGTTAACATCATAGGAACACTTGTCTGT 948	FT	Key
QY	726 GGTAGTAGTACTGAGAACATCAGAATGGATTGTTAACAGAACGAACTTGTCTGT 785	FT	Location/Qualifiers
Db	949 TGTGTCTACTGAGAACATCAGAATGGATTGTTAACAGAACGAACTTGTCTGT 1008	FT	/*tag* a
QY	786 CCCTTAATCTGTTAGGTTGGTTCGGGTTCTGCTTCGACAGCTTGG 845	XX	1.1521
Db	1009 ACCGAACTCTGTTGTTGAGTTGGCTCTGCGGTTTGTCTATCGAGGA 1068	XX	PD
QY	845 TCGAAACCGAACCCAGATAAGCTTGTCTATCGGGTCAAGACTATAGA 905	XX	09-MAY-1996.
Db	1069 CAAGAGACGGCTTAAGTACAGGCTGAGCTGAGTCGGTGGAGCAGTA 1128	XX	XX
QY	906 GAACCATTCAGTGTGTTAGCTAGGAGCTGAGTTGTTGAAACCGGGTTCTT 965	XX	23-OCT-1995; 95NO-US13918.
Db	1129 TAACTTTCGGTGTGTTATCAGAGCTGAGGAGATACAGGGAAACGGGTTCTT 1188	XX	XX
QY	966 GTCTAAAGATCTTATGGCTAGCTGGAGCTTAAGGAAATTCACCTTGG 1025	PT	26-OCT-1994; 94US-0329603.
Db	1189 GTCGAAAGACTTAATGGCTGAGGAAACTCTAACATACATGG 1248	XX	(DNAP) DNA PLANT TECHNOLOGY CORP.
QY	1026 TCTCTGGTCTTCCATAATAGCAGCTGAGCTCTGCTCTGACTTTGTCTAAG 1085	XX	Pi Dooner HK, James DW, Keller J, Lim E;
Db	1249 TCCCTGTCTTACCGATACTGAGCAGATTCTCTCTTATGACTCTGTGAGA 1307	XX	DR DR; AAR95594.
QY	1086 ATTTGTCAGACAGAAGAAGAAGAAGCTTACATACGGATTCAAGTCGTCTTAGATA 1145	PS	WPI: 1996-239495/24.
Db	1308 --AGCTCTTAACTGTAAGTGAACCGATAATCCGGATTCAACTGCTTGTGAGCA 1365	XX	P-PSB; AAR95594.
QY	1146 TTCTCTGTTACGGGGAGTAGGCCGAGTATGAGCTAGAACAGCTTAAAGT 1205	XX	New DNA constructs contg. FAEL gene sequences - used to produce transgenic plants with modified fatty acid content in plant organs or parts, esp. seeds
Db	1366 TTCTCTGTTACGGGGAGTAGGCCGAGTATGAGCTAGAACAGCTTAAAGT 1425	XX	claim 3; page 35; 48pp; English.
QY	1206 TTCTCCAAACACTGAGGGCTCTAGAGACTCTGAGATTTGGAAACACUCCTC 1265	XX	A cDNA clone (AAU27036) codes for the fatty acid elongation enzyme FAEL (AAR95594) that catalyses the conversion of oleic acid (18:1) to elcosenoic acid (20:1) and of elcosenoic acid to erucic acid (22:1). It was isolated from a cDNA library prep. from 2-3 wk old Arabidopsis green siliques by screening with a probe obt. by inverse PCR amplification (see also AAU27038-39) of a mutant FAEL gene. The cDNA can be linked in antisense orientation to a promoter, pref. a seed-specific plant promoter, and used to produce transgenic plants, esp. of Brassica napus, with reduced very long chain fatty acid (VLCFA) content useful for edible prodn. Sense constructs provide increased VLCFA prodn. for industrial use.
Db	1426 TTACCAAGTTCTAGTCGGAGGCTTCTGGAGATCTCTACATGTTGGACATCTC 1485	CC	Sequence 1641 BP; 449 A; 342 C; 355 G; 495 T; 0 other;
Db	1266 TACCTCTATGTTGTTGCTTACCGGGAAATGGAAAGGAA 1325	CC	Query Match 44.6%; Score 652.4; DB 17; Length 1641; Best Local Similarity 67.1%; Pred. No. 7. 6e-179; Matches 979; Conservative 0; Mismatches 436; Index 45; Gaps 2;
QY	1486 GAGCTCCATTGTTGTTGCTTACCTGAACTGAGCTGGTAACTGAA 1545	CC	44 ACGRCAAGCTGGTTTACTATCTGATCTGCTTAAACCATCTCGCCTC 103
QY	1326 CAGCTGTGGCGATCTTGGTACGGGTTAATGTTAACTGAACTGAGCTGGTAA 1385	Db	14 ACGTTAACTCTCTTACGGTTACGCTTAACCACTTTCACCTGTTGTCCTCG 73
Db	1546 TCGTGTGGCAATCGGGTCCGGTTAATGTTAACTGAACTGAGCTGGTAA 1605	QY	104 TAATGCTGTGTTCTCATGATCTCTGTTAACTGAACTGAGCTGGTAACTGCTCC 133
QY	1386 TCTTCGCAATGTCGGCTCTGGTTAATGTTAACTGAACTGAGCTGGTAA 1445	Db	74 TAACGGCTCCCGCGGAAAGCGCTCTGGCTTACATAACGATCTCCACACTTCC 157
Db	1606 ATTTAGGGATGAAACCTTCGACACACAGCCTTGTGAGATTTGTCAGACATTC 1665	QY	-----CCTATCTACATTCACGGGCTCTGGCTTACATACTCTCTGCTTC 208
QY	1446 GGTA 1450	Db	134 TTCTCTACACACACTTAACTGTTACTTACTCTGCTTC 193
Db	1666 GGTA 1670	QY	209 GATCCATTGGCTTCTGCTGACCTGATCCATCTACCTCTCTAGATRACTCTGCT 268

QY	1319	AAGGAAACAGAGTTGGCAGATTCCTTGGTAGGGGTTAAGTGTACACGGCGGTT	13
Db	1334	AAGGAAATAAAGCTTGGCAGATTCCTTGGAGATCGGGTTAAGTGTATAGGCGGTT	13
QY	1379	GGGTGCGCTTCCGATGTCGACGAGCTGGTTAACATCCTGGAACTTCGATCCATA	14
Db	1394	GGGTGCGCTTACCGCATGTCGAAGGCATGGCAATAGTCTTGGCAACATGCGATA	14
QY	1439	GATATCGGTTAGATGGAT	1458
Db	1454	GATATCCGGTTAAATGAT	1473
RESULT 10			
	AAD28500		
	ID	AAD28500 standard; DNA; 1709 BP.	
XX			
AC	AAD28500;		
XX			
DT	22-APR-2002	(first entry)	
XX			
DE	Arabidopsis thaliana FAEL gene.		
XX			
KW	Fatty acid elongase 3-keroyacyl COA synthase; elongase KCS; enzyme;		
KW	very long chain fatty acid; VLCFA; FAEL gene; ds.		
XX			
OS	Arabidopsis thaliana.		
XX			
FH	Location/Qualifiers		
FT	1..1521		
FT	/*tag= a		
FT	/product= "Arabidopsis thaliana FAEL protein"		

New fatty acid elongase 3-ketocetyl CoA synthase polypeptide and nucleic acids encoding the polypeptide, useful for producing very long chain fatty acids

QY	44	ACGTCAAGCTTGTATCACATCATCGATCACTCACTTTAACTCATGTTCTCCCTC	103	QY	1079	CTAAGGAGATGTTCATGACAAGAAGAGAAGCCATACACGGATTCAGCTTGCTT	1138
Db	14	ACGTAACTCTTACCGTCTAACCACTTTCACCTCTGTTGTCGGCT 73		Db	1094	CCAGAACTTCAGGTTAACATCAGCATTAATCTGTCGGATTCAAGCTTGCTG	1153
QY	104	TAATGCTGTGTTGTCATGATGCTCATGTTAACCGTCTAACCACTTTCACCTCTGTTGTCGGCT 156		Db	1139	TAGTCATUTCTGATCACGGGGAGTAGACGGCTGATGAGTAGAGAGGTT	1198
Db	74	TAACGGGTTCTCGCCGAAAGGCTCTGGCTTACCATTAACGATCTCACACTCC	133	QY	1154	TTGACCATTCGATCATGCGGAGGAGGGCTAGACGGCTGATGAGTAGAGGTT	1213
QY	157	-----CTCTATTACAATTCACCGATCATCTGTCATTAACGATCTCACACTCC	133	QY	1199	TAAGCTTCTCAAAACATGTTAGAGTACTTGATAGATTGAAACA	1258
Db	134	TTCCTCATTCACACACCCATACAGTACTTACTCTTGCTTACAGTITTC	193	Db	1214	TAGGATATCGCCGATCGATGGAGGAGCTAGATCACGTTACATGAGTTGGATA	1273
QY	209	GATCCATGTCCTCTCATGTCGACCTGATGTCATCTCTAGATGTTACTCTGCT	268	QY	1259	CTTCCTCTGCTCATATGGTAGATGGTAGTGCTTACACGGAACTAAAGGAAGTGGGA	1318
QY	194	GTTGGTTCTACACGTCATGTTACCCGGAAACCCATCCGGTTAACCTGTTGACACTCGT	253	Db	1274	CTTCATCTGACTCTCATTTGTTATGATTAATGACATAGTTCTACCC	1333
QY	269	ACCTCCGCTTGTAGTCAAAAGTAGTACGATACAGCAAGTACGAACTCTACTTTGA	328	QY	1319	AAGGAAACAGATGTTGCGAGATGCTTGTAGGGTTAAAGTGTACACCGGTT	1378
Db	254	ACCTTCACACACCGCACTCAAGTGTAGTGTCTAAAGTGTATGGATATTCTACCAA	313	Db	1334	AAGGAAATAAGCTTGCGAGATGCTTGTAGGTTAAAGTGTATAGTGCGAT	1393
Db	329	TTCAGAGTTCAAGAACACTCT		QY	1379	GGGTGCTCTCGCAATGTTGAGGAGCTCTGGGTTAACATCCTGGACATTCATA	1438
Db	314	TAAGAATACGTTACCTTCACGGACCGGCATGTGATGATCGTCCCGCGAT	373	Db	1394	GGGTGCTCTACGCAATGTCAGGCAATGTCGCAATGTCCTGGCACATGTCATGATA	1453
QY	359	TCCAGGAGAGTCTGTTACCTCTGTCGAGAGACTTTACCGGATCTA 418		QY	1439	GATAACGGTTAAGATCGAT 1458	
Db	374	TCTTGAGGAGAGTCAAGAGCGTCAAGCTGTCAGGTTAGGTGAGACTGATCGT	433	Db	1454	GATATCGGTTAAATGAT 1473	
QY	419	TTCACTCTATCCCTCGCTCTACTATGCGTCAACGGCGGAGAGCTA 478					
Db	434	TCAATCAGTACACCGCGGAAGACTTTGCGAGCTGAGAGACAGAGGTTA 493					
QY	479	TCTCGGGTCACTCGACAACTTCTGAGATAACAAATCAATCTTAGGGATGTTG	538				
Db	494	TCACTGGGCGCTCGAAATCTATCCGATGTTAACCTGGAGGATGGATGTTG	553				
QY	539	TCTCTGTTGTTGAACTTAACTCCGCTTCTTATCCGATGTTAACCTGGAGGATGTTA 598					
Db	554	TACTGTGTTGAACTCAAGCACTTTGTTAACCTGGCTTATCGCTATGGCTTA 613					
QY	599	ACAACTGATAGCTTGTAGGAAACATTAAGAGCTTTAACCTGGAGGATGGATGTTA 658					
Db	614	ATACTTCAAGCTCGAACGAACTCAATCTATCCGAGAACGACCAAGTCA 673					
QY	659	CTGCTGTTATCGGGGTAGACTGCTAGTATGTTAACCTGGAGAACCTTTG	718				
Db	674	CTGGCTGTTATGCTGCTGTTGGCTAAGACTGTTGCTGAGCTTGTGTTG	733				
QY	719	CTCTCTGTTGTTGAACTTAACTCTGAGATGTTGGTACAAAGAACCAA 778					
Db	734	CTCTCTGTTGTTGAGACTGACATCACKCAAGGCAATTATGCTGAGAAATGATCA	793				
QY	779	TGTGATCCCTAAATGCTGTTAGTGTGGTTGGGTTCTCTTGGATGACAGCAG 838					
Db	794	TGTGTTGTTGCAATTGCTGTTGTTGGGGGGCGGATTTGCTCTAACAGT	853				
QY	839	CTTCTGATGAAACGATCAGTATAAGCTGTTACAGGTCAGGACTCATTAAGGT	898				
Db	854	CGGGAGACCGAGACGGCTCAAGTACAGACTGTCACAGGCTCGGAACGACTGG	913				
QY	899	CTGATGAGAACGCAATTGTTGTTGAAACGGAG 958					
Db	914	CTGATGAGAACGATCAGTACCAAGTGGGGGACACACTAACGAGGAGGAAATGGAG	973				
QY	959	TTCTCTGCTAAAGCTTATGCTCATGCTGAGAGACTTTAACGAGAAATCT	1018				
Db	974	TTTGGCTGCTGCTGAAAGCATACCAAGTGGGGGACACACTAACGAGGAGGAAATGGAG	1033				
QY	1019	CTTGGGTTCTCTGGTCTCTAAGGAGAGACTTGTCTTGGACTTTG	1078				
Db	1034	CATGGGTCGTTGATCTCTTAAAGGAAAAGTTGTTGCTTACCTCTGTCG	1093				

RESULT 11
 AAZ3524
 ID AAZ3524 standard; DNA; 1792 BP.
 XX AAZ3524;
 XX AC
 XX DT 01-FEB-2000 (first entry)
 XX DE Fatty acid elongase gene FAE-1.
 XX Fatty acid elongase; FAE-1; stomatal guard cell; promoter; stomata;
 KW transcription factor; cotton; tobacco; citrus plant; nut plant; insect;
 KW resistance; tolerance; herbicide; desiccation; fungal infection;
 KW viral infection; bacterial infection; ss;
 XX Arabidopsis thaliana.
 OS Arabidopsis thaliana.
 PN WO995471-A1.
 XX
 PD 28-OCT-1999.
 XX
 PF 19-APR-1999; 99WO-GB01191.
 XX
 PR 20-APR-1998; 98GB-0008304.
 XX
 PA (ZENE) ZENeca LTD.
 XX
 Van Der Lee FM, Simjons PC, Hetherington AM, Holroyd GH, Gray JE;
 XX
 DR WO1; 2000-013254/01.
 XX
 PT Novel Polynucleotide sequences used to produce plants with increased
 PT numbers of stomata -
 XX
 PS Claim 2; Page 36-37; 45pp; English.

This sequence is the fatty acid elongase gene FAE-1 from arabidopsis thaliana. The FAE-1 sequence can act as a stomatal guard cell specific promoter. The sequence is used in the invention which relates to a method for producing plants with increased numbers of stomata. The method involves inhibiting, in plant material, the production of fatty acids which stimulate the synthesis of the 14-3-3 class of transcription factors, or preventing the fatty acids from stimulating the synthesis of these factors (via disrupting the FAE-1 gene); selecting the inhibited

material; regenerating plants from it; and selecting plants with increased numbers of stomata. The sequence can also be used to produce a vector which can be introduced into plant cells to induce greater stomata expression. The methods are used to produce plants with increased numbers of stomata on their leaves. Plants which can be used in the methods of the invention include soybean, cotton, tobacco, sugarbeet, oilseed rape, canola, flax, sunflower, potato, tomato, alfalfa, lettuce, maize, wheat, sorghum, rye, bananas, barley, oat, turf grass, forage grass, sugar cane, pea, field bean, rice, pine, poplar, apple, grape, vines, cucumbers, peppers, citrus and nut plants. The plants may also be transformed, with genes which provide resistance or tolerance to herbicides, with desiccation and/or fungal, bacterial or viral infections.

XX SQ Sequence 1792 BP; 501 A; 377 C; 373 G; 541 T; 0 other;

Query Match Best Local Similarity 44.6%; Score 652.4; DB 21; Length 1792; Matches 979; Conservative 0; Mismatches 436; Indels 45; gaps 2;

QY

Db

Db 877 TGAATGTTAGCAATGCTTGTGTTGGGGCGGATTTCCTCTAACAAGT 936
 QY 839 CTTGGATGAAACGATCCAGTATAAGCTGTTCACTACGGTCAGACTATAAGAT 908
 Db 937 CGGAGACGGAGACGGTCAAGCTACAGTACTACACGTCAGTACTACACGTCAGTGG 996
 QY 899 CTGATGAGACGGATCAGTGTGTTCAAGACAGATGAGTGTGAAACGGG 958
 Db 997 CTGATGAGACGGTCTTGATGTTGCACTGAGACAGAGTCAGTGGACAGGGCAAAATGG 1056
 QY 959 TTCTTGCTAAAGATCTATGGCTTAGCTGGAGAGCTTAAAGACERATCACT 1018
 Db 1057 TTTGCTCTCAANGACATAACCATGTCGGGAGACACTTAAAGACATAAGCAA 1116
 QY 1019 CTGGGGCTCTGTTCTTATAAGCGAGCAGTCTCTTGGACTTTGTG 1078
 Db 1117 CATGGGCGTTAGCTTAAAGCTTAAAGCGAAAGTGTCTTGTG 1176
 QY 1079 CTAGAGATGTTCAATGACAGAGAAGACGCTTACATACCGGATTCAAGCTGTCT 1138
 Db 1177 CCGAGAAACTCTAAGGATAAAATCAAGCAATTACAGCTTACATGTGTCGGATTCAGCTGGC 1236
 QY 1139 TAGATCTTCTGTTACCGGGAGGTAGACCGCTTACGTTAGTGTAGCTAGAGAGAGT 1198
 Db 1237 TTGACCAATTCTGTTACATGCCGGAGGAGCGAGGCGTGTGAGCTTGTG 1296
 QY 1199 TAAAGCTTCTCAAACATGTTGAGCTAGATGACTTGTGATGACTTGTGATACTGGT 1258
 Db 1297 TAGACTATGCCGATCGAGTGGGGCTAGTCACTACAGTGTACAGTGTAGGGT 1356
 QY 1259 CTCTCTAGCTCTATGGTATGATTGATGTTGCTTACCGAAAGCTTAAAGGAAAGTGGAA 1318
 Db 1357 CTTCATCTAGTCATTTGGTATGATTGACATAGTAAAGGCAAGGAGATGAGA 1416
 QY 1319 AAGGAACAGAGTTGAGCATTTGTTGGTAGCGGGTTAAAGTGTACAGGGGTT 1378
 Db 1417 AAGGAAATAAGCTTGGCAGATGCTTAAAGTGTAGGGTTAAGTGTAAAGTGGGTT 1476
 QY 1379 GGGTGCCTCTGGCAATGTCGAGCTGGCCCTCGTTAACCACTCTGGACATGCTCCAA 1438
 Db 1477 GGGTGCCTCTGGCAATGTCGAGCTGGCCAAATAGTCGTCAGCATCCATA 1536
 QY 1439 GATACCGGTTAAGTCGAT 1458
 Db 1537 GATATCCGGTTAAATGTAT 1556

RESULT 12

ID AAD28517

ID AAD28517 standard; DNA; 1709 BP.

ID AAD28517;.

XX DT 22-RPR-2002 (first entry)

XX DE Arabidopsis thaliana FAE1 gene mutant, At K92R.

XX KW Fatty acid elongase 3-ketoacyl CoA synthase; elongase KCS; enzyme;

XX KW very long chain fatty acid; VLCFA; FAE1 gene; mutant; ds.

XX OS Arabidopsis thaliana.

XX FT Key Location/Qualifiers

XX FT CD 1..1521

FT FT /*tag= a /product= "Arabidopsis thaliana FAE1 protein

FT FT mutation mutant, At K92R" replace b /*tag= b

XX PN W020194565-A2.

XX PD 13-DEC-2001.

XX 08-JUN-2001; 2001WO-US18737.
 PF 08-JUN-2000; 2000US-210326P.
 PR XX (UYMI-) UNIV MIAMI.
 PA XX Jaworski JG, Blacklock BJ;
 PI XX WPI: 2002-154572/2-20.
 DR XX P-PSDB, RAEI7625.
 DR XX New fatty acid elongase 3-ketoacyl CoA synthase polypeptide and nucleic acid encoding the polypeptide, useful for producing very long chain fatty acids -
 PS XX Disclosure; Fig 2-18; 139PP: English.
 CC The invention relates to fatty acid elongase 3-ketoacyl CoA synthase (KCS) polypeptides with altered substrate specificity and/or catalytic activity and nucleic acid molecules encoding such polypeptides. Polypeptides of the invention are useful for catalysing the condensation of C18 fatty acyl substrate and malonyl CoA, leading to the synthesis of C20 fatty acyl CoA. They are especially useful for producing very long chain fatty acids (VLAFA) and may be used in the development of reagents for various purposes, e.g., immunological reagents to monitor expression of elongase KCS polypeptides or nucleic acid probes or primers to monitor inheritance of an elongase KCS gene in plant breeding programs. The present sequence is a mutant of *Arabidopsis thaliana* elongase KCS protein encoding FAE1 gene designated as At K92R.
 XX Sequence 1709 BP; 465 A; 355 C; 364 G; 524 T; 0 other;
 Best Local Similarity 44.5%; Score 650.8; DB 24; Length 1709;
 Matches 978; Conservative 0; Mismatches 437; Indels 45; Gaps 2;
 Qy 44 ACGTCAGCTGGTATCACTATCGATGACTACTCACTTTTAACNTCATGTCCTCCCTC 103
 Qy 14 ACGGTAAAGCTCTTACCGTTACGCTTAACTTTCAACCTCTGTTGTCGGT 73
 Db 104 TRAGCTGTTGTCATGATGTCATGCTCTGTTAGCTTAACCATCTTCAG----- 156
 Qy 74 TAACGGCTTCTCGCGAAAGCCCTCGGTTACCGTCAACGCTCCACACTTC 133
 Qy 157 -----CTCTATACATTCCACCGGATTCATCTCGCATCTACTCCGCCATTGTC 208
 Qy 134 TTTCCTATCCACACCTTATACAGAACCTTACAGCTTACGTTACGTTTG 193
 Qy 209 GATCCATGTCCTCTCACTGTCGACCTAGATCCATCTGATGTTACTCTG 268
 Db 194 GTTGGTTCTCACTGTCGAACCGAACCCATTCCGGTTATCTGGTTGACTCTG 253
 Qy 269 ACCTCCGCCTCTGAGTCAAAGATAGCTACCCAGAAATCATGACACACTCTG 328
 Qy 254 ACCTTCACCGACGATCTCTGAGTCAAAGATAGCTACCCAGAAATCATG 313
 Qy 329 TCAAGATTCAGCAACTCT-----CTGAGT 358
 Db 314 TAAGAAAGACTGATCTCTGAGTCAGGAACTGGCGATGATGATCCGCT 373
 Qy 359 TCCAGAGGAGACTCTGTTCTGCTCTGCTGGTGAAGAGACTTATACCGATCTA 418
 Db 374 TCCGAGGAGATTCAGAGCGCTCTGAGTCAGGCTAGGCTCTGAGGAC 433
 Qy 419 TTCACTCATCCCTCGGCTTCACTGAGTCAGGCTCTGAGTCAGGCTCTG 478
 Qy 434 TCACTCACTACCCACGGGAGACTCTGAGTCAGGCTCTGAGGAC 493
 Qy 479 TCTTGGTGCACGACATCTTGAGAATCACAAATCATCCPAGGAGATGGTG 538
 Db 494 TCACTGGCTCGCTGAAATCATATCGAGAACACCAAGTTACCTAGAGATGTA 553

Qy 539 TCTCTGTTGGAATGTTGTTAACCTTACGCCCTACGCCCTCTTATCCGCCATGATGTTA 598
 Db 554 TACTTGTTGAACTCAAGCACTTAACTCAACTCTCGTATCGCTATGGCTTA 613
 Qy 599 ACAAGTATAAGCTTAGAGAAAGCTTAACTAGAGCTTAACTCTGGAGATGGATGTTG 658
 Db 614 ATACCTTCAGCTCGAAGCACATCAAAGCTTAACTCTAGAGGATGGATGGTG 673
 Qy 659 CTGGTGTATCGCGCTAGATCTGCTAGCTAGTATGTTACAAATCCAGAACACTTTG 718
 Db 674 CTGGTGTATGCTTAACTGCTTAAAGCTTGTGTCATGTTCAAAACACTATG 733
 PS 719 CTCTCTGGTTAGTACTGAGAGAACATCCACTCAGAATTGTTATTTGGTACAGAAGCAA 778
 CC 734 CTCTCTGGTGTAGACTGAGACATCACACAGCAAGCTTATGCTGGAGAAATAGATCAA 793
 CC 779 TGTGTTACCTTAATGCTGTTAGTGTAGTGTGTTGGTCCGGGTTCTGCTTCGACAGC 838
 CC 794 TGTGTTAGGAATGCTTCTTCTGTTGTTGGTGGGGGGATTTGGCTCTCAACAGT 853
 Db 839 CTTGTGATGAAAGCTCAAGTAACTGCTTAACTGGTCTATAGGGTCAAGGAT 898
 Qy 854 CGGGACACGGAGACCGTCCAGTAACTGCTACAGCTACAGGTCAGCTACAGG 913
 Qy 899 CTGAGAGAAGCCATCAATGTTGTTGTTGAGAACTGAGCTTACAGCTTACAGG 958
 Db 914 CTGATGACACGCTTCTGAGTGTGCAAGAGCTAGTCTACAGGTCAGCTACAGT 973
 Qy 959 TTCTTGCTTAAAGCTTATGGTATGCTTAAAGGAAATTCACCT 1018
 Db 974 TTGTTCTGTCAAAGGATAACCAAGTTGGGGACACACTTGAGAAATTTAGGAA 1033
 Qy 1019 CTTGGGCTCTGGTCTTAAAGGATAATGGGAGATTCCTGTTCTTGGACTTTG 1078
 Db 1034 CATTGGTCCGGTGTAGTCTTCACTCTTAAAGGAAAGTTCTGCTACCTTCGTCG 1093
 Qy 1079 CTAGAGATGTCATGAGCAAGAGAACGCTTACACCGATTCAAGCTTCAAGCTGCT 1138
 Db 1094 CCAAGAACTCTAAAGGATAATGGGATTTAAGCTTACTATGTTCCGGATTCAAGCTGCT 1153
 Qy 1139 TAACTCATCTGTTATCACCGGGGAGTAGAGCCCTGATGATGAGCTAGAGAGTT 1198
 Qy 1154 TTGACCATTCATTCATGCGGGGAGCAGCCCTGAGCTGAGACT 1213
 Db 1199 TAAGCTTCTCAAACATGTTGAGCGCTTAAAGTACTTGTGATGATGTTGGAAACA 1258
 Qy 1214 TAGGACTATCGCGGATGCGATGAGGACCATCTGAGCAACGTTTACAGTTGGATA 1273
 Db 1259 CTTCCTCATGCTTATGGTGTAGTGTGCTTACCGGAAGCTTAAAGGAAGATGGGA 1318
 Qy 1274 CTTCATCTGACTCTAACTGGTGTAGTGTAGCTACATGAGGAACTGGGAGA 1333
 Qy 1319 AAGGACAGAGTTGCGAGATGTTGAGCTACAGGCAAGGGAAAGGAGA 1378
 Db 1334 AAGGAAATAAGCTGGCAGATGTTGAGCTTAAAGTGTAGTGTGCGTT 1393
 Qy 1379 GGGTGCCTCTGCGATGTCGACCTCGGTTAACATCCTGGGACATGTCATCATA 1438
 Db 1394 GGGTGCCTCTGCGATGTCGACCTCGGTTAACATGTCATCATA 1453
 Qy 1439 GATATCCGGTTAAGTGTATGATCCGCTCTGCGATGTT 1458
 Db 1454 GATATCCGGTTAAGTGTATGAT 1473

RESULT 13
 AAD28513
 AAD8513 standard; DNA; 1521 BP.
 XX AAD28513;
 AC XX
 DT 22-APR-2002 (first entry)

DE Brassica napus elongase KCS-A. thaliana FAEL chimeric gene, Bn176.
 XX
 KW Fatty acid elongase 3-ketoacyl CoA synthase; elongase KCS; enzyme;
 XX very long chain fatty acid; VLCFA; FAEL gene; chimeric; ds.
 OS Chimeric - Brassica napus.
 XX Chimeric - Arabidopsis thaliana.
 Key Location/Qualifiers
 CDS 1..1521
 FT misc_feature /*tag= a chimeric protein, Bn176
 FT /*tag= b "Brassica napus elongase KCS-A. thaliana FAEL
 FT /*note= "Brassica napus elongase KCS gene"
 FT /*tag= c /note= "Arabidopsis thaliana FAEL gene"
 WO200194565-A2.
 PD 13-DEC-2001.
 XX
 PR 08-JUN-2001; 2001WO-US18737.
 XX 08-JUN-2000; 2000US-210326P.
 PA (UWMI) UNIV MIAMI.
 XX
 PT Jaworski, JG, Blacklock, BJ;
 XX
 DR WPI: 2002-154572/20.
 DR P-PSDB; AAE17621.
 XX
 PT New fatty acid elongase 3-ketoacyl CoA synthase polypeptide and nucleic
 acids encoding the polypeptide, useful for producing very long chain
 disclosure; Fig 2-14; 139pp; English.
 The invention relates to fatty acid elongase 3-ketoacyl CoA synthase
 (KCS) polypeptides with altered substrate specificity and/or catalytic
 activity and nucleic acid molecules encoding such polypeptides.
 Polypeptides of the invention are useful for catalysing the condensation
 of C18 fatty acyl substrate and malonyl CoA, leading to the synthesis
 of C20 fatty acyl CoA. They are especially useful for producing very
 long chain fatty acids (VLCFA) and may be used in the development of
 reagents for various purposes, e.g., immunological reagents to monitor
 expression of elongase KCS polypeptides or nucleic acid probes or
 primers to monitor inheritance of an elongase KCS gene in plant breeding
 programs. The present sequence is Brassica napus elongase KCS-
 Arabidopsis thaliana FAEL chimeric gene designated as Bn176.
 Sequence 1521 BP; 421 A; 333 C; 346 G; 421 T; 0 other;
 Query Match 44 28; Score 647.6; DB 24; Length 1521;
 Best Local Similarity 66.8%; Pred. No. 1.8e-177;
 Matches 976; Conservative 0; Mismatches 439; Indels 45; Gaps 2;
 Oy
 44 AGCTCAAGCTGGTATCACTATCTGATCACTCACTTTAACTCATGTTCCCTCC 103
 Db
 14 AGCTAAAGCTCTTACCTTACGCTAACCAACCTTCACCTTGCCTCTCGT 73
 Oy
 104 TATGGCTTTGTCATGATGTCATGTTAGCTTAACCATCTCAGCTCTT 163
 Db
 74 TRACSGCGATGTCGCGAGAAAGCTTACGGCTTACATAGAGCTTACACTT 133
 Oy
 164 ACAATTCACCGGATTCATCTCGTCATRACTCTCG-----CCATTG 205
 Db
 134 ACTATTCCTACTCCACACAACTCTACATCGCTCACCTTGGCTCACCGTT 193
 Oy
 206 TCGGATCAGTGTCTCTCATGCTCGACCTAGATCCCTACCTCTAGATTACTCTT 265

Db 194 TCGGTTCTCGTCTCTACATCGCACCCGCCAACGGTTAACCTGCTGAGTCAT 253
 Qy
 266 GCTTACCTCCGCCTCGATCAAAGTTAGCTTACCGAAATTCAGAACACTCTGTT 325
 Db 254 GCTTACCTCCACCAACGCTTGGATCAAGTATCTCCAAGTCATGGATCTT 313
 Qy
 326 TGTATCAAGATTCAGGAAACT-----TCTCTGAGT 358
 Db 314 ACTATAGAAAGCTGATCTCTGGACGGACGGACGTCGATGACTGTCGGTGGCTGACT 373
 Qy
 359 TCCAGGAGAGATCTGATGGCTCTGTCGGTGGAGACTTATTACCGGATCTA 418
 Db 374 TCTTGGAGAGATTCAGAACCTTCAAGTCAGTCAGGATGTAAGG 433
 Qy
 419 TGCATCTATCCCTCCGGTCTACTATGGCTGCCGGGTGAAGAGCGAGGTA 478
 Db 434 TGCATGAGTCCTCCGGAGACHTTGGCGGCCGAGAGGAGGAGGTTA 493
 Qy
 479 TCTTGGTGCACTCGACATCTTGGAGATACTCAAATCACTCTAGGGAGATGGG 538
 Db 494 TCATGGTGCCTAGAAATCTCAAGAACACCAAGTAACCTAGAGATGGTA 613.
 Qy
 539 TCTCTGGTGAATGTTAGTTAACCTTACCCCATGTTACCCCTTGCTGTA 553
 Db 554 TACTTGTTGAACTCAAGCAGTTATCCACCTCTTGGCTATGGTCA 598
 Qy
 599 ACAAGATAAACTTGGAGAACACATTAAGAGCTTAAACCTTGGAGGAGTGGATG 658
 Db 614 ATACTTCAGCTCGAGAACATCACCTAAGAGCTTAAACCTAGAGATGGTACTG 733
 Qy
 659 CTGGGTTATCGCGTAGCTGCTAGCTGTTAGAGTTGGTCTGGGGTCTGGTT 718
 Db 674 CTGGGTATGCCATTGCTGTTAGCTGCTAGCTGTTAGGAGAACTATGAT 733
 Qy
 719 CTCTCTGGTAGTCTGAGAACATCACCTCAGATGGTTAGGAGTGGTTAG 778
 Db 734 CTCTCTGGTAGGACCTGAGAACATCACCAAGGATTTGCTGAGAAATAGCTCAA 793
 Qy
 779 TGTCTATCCCTAATGCTGCTGTTAGAGTTGGTCTGGGGTCTGGTT 838
 Db 794 TGATGTTGCAATTGCTGTTGCTGTTGCTGTTGGGGGAGTTGCTCTCRACT 853
 Qy
 839 CTTGGATCGAAAGCTAACAGTAACTGATTAAGCTTGTCTCATAGGGTCAAGGAT 898
 Db 854 CGGGGACGGAGAGGGTCACATGACAGTCTGAGCTTACGCGTCCGACGCACTTGAG 913
 Qy
 899 CTGATGAGAACGCACTCAATTGTTGTTGATCAAGAACAGATGAGCTTGTGAAACGGG 958
 Db 914 CTGAGACAGTCCTTCGATGTTGTCACAGAGATGAGCTTGTGAAACGGG 973
 Qy
 959 TTTCTGGCTAAAGCTTATGGCTTACGGCTTACGGAGAGCTTAAAGCAATACCTT 1018
 Db 974 TTGCTGTCGACAGGACATAACCAATGCTGGGGGACACCTTACGAAATATGCA 1033
 Qy
 1019 CTTGGGTTCTCTGGTCTTCTCTATGGCGAGATCTGTTCTGGGACTTTGTT 1078
 Db 1034 CATGGGTCGTTGATCTCTCTTAAAGCTTCTGCTACCTGTC 1153
 Qy
 1079 CTAGAGATGTTCTACGACAGAACGACCTTACACCGGTTCAAGCTGCTT 1138
 Db 1094 CCAGAACACTCTAACAGATAATAGCTTACGATGTTCCGGTTCAAGCTGCTG 1153
 Qy
 1139 TAGATCATCTGATTCACGGGGGAGTAGCTGCTGAGCTGAGAGT 1198
 Db 1154 TGGACATTCGTTACATGCCGGAGCAGCCGCTGATGCTGAGCTGAGAGACT 1213
 Qy
 1199 TAAAGCTTCTCCAAACATGTTGGCTCTAGATGACTTGCATAGTTGGACA 1258
 Db 1214 TAGGACTATGCCGATGATGGAGCCTAGATCACGTTACATGATTTGGATA 1273
 Qy
 1259 CTTCCTCTAGCTATGGATGCTTACGGAGCTAACAGGAATGAGGA 1318

Db 554 TACTCTGCGGAACTCAAGCATGTTAACCTCAACTCCTHGTCTGCTATCCGCTATGGTCGTTA 613
 Qy 599 ACAAGTATAAGCTTAGGAAACATTAAGGCTTAACCTTAAGGCTTAACCTGGGAAATGGGATGTAGTG 658
 Db 614 ATACTTCAGCTCCGAAGAACATCAAGCTTAAGGCTTAACCTGGGAAATGGGATGTAGTG 673
 Qy 659 CTTGGCTTATAGCGGTTAGATCTAGCTAGTGTATGTTACAAATCCATAGGAAATGGGATGTAGTG 718
 Db 674 CTGGTGTATGCCATTGATTTGGCTAAAGACTTGTGAGTCATAAACACTATG 733
 Qy 719 CTTCTGGGTTAGTACTGAGAACACTCTAGAAATGGTAAATGGTAAAGGAAAGAGCA 778
 Db 734 CTTCTGGGTTAGCAGTACACAGCATACACAGGATTTGCTGGAGAAATAGATCA 793
 Qy 779 TGTGATCCCTAATGCTTGTAGGTTAGCTTGTTAGCTTGTTAGCTGTTGCTGACAAAC 838
 Db 794 TGTGTTAGCATTGCTGTTGCTGGTGGGGCGGCAATTGCTCTACAGT 853
 Qy 839 CTTTGATGCGAAACGGCTCAAGTATAGCTGTTAGCTGTTAGCTGAGACCTAAAGAT 898
 Db 854 CGGGAGACGGAGACGCTCCAACTGAGTACACCGTACAGTAACTGGAG 913
 Qy 899 CTGATGAGAACGATTCATTTGTTGATCAGAACAGAACAGTACAGGTTGAAACGGAG 958
 Db 914 CTGATGAGAACGTTTGTGATGTCACAGAACAGAACAGTACAGGAGCGGCAAATGGAG 973
 Qy 959 TTCTCTGCTAAAGATCTATGGCTATAGCTGTTAGCTGAGAGCTTAAGGACATATCACT 1018
 Db 974 TTCTCTGCTAAAGACATTTGTTGCTGAGACGTTGCGGGACAACTTGTGAAATATGCA 1033
 Db 1019 CTTGGGGCTCTGGGCTCTCCCTATAGGAGACAGATCTGTTCTGGACTTTGTTG 1078
 Qy 1034 CTTGGGCTCTGGTGTCTCTCTTAAAGGAAAGTTCTTCTTGTACTCTGTCG 1093
 Qy 1079 CTAAAGAGATGTTCAATGCAAGAACAGAACAGAACGCTTACCGGATTCAAGCTTGCTT 1138
 Db 1094 CCAGAACCTCTAAAGGATAATCAGCATTTACTATGTCGGGTTAACCTTGGAGAGT 1198
 Qy 1139 TAGTCATCTGATTCAAGGGGAGTTAGCCGGTGTAGTGTAGCTAGAGAGTT 1198
 Db 1154 TTGACCATCTGTTGTTGTTGCTGAGGAGAC 1213
 Qy 1199 TAAGCTTCTCCAAACATGTGAGGCCCTAGAATGACTTGTGCTAGATTTGAAACA 1258
 Db 1214 TAGCCCTGACCCGATCGAGTAGGCAAGATCAAGCTTACATAGTTGGAAACA 1273
 Db 1259 CTTCCTCTAGCTATATGGTATGATGTTGCTTACCGGAGCTAAAGGAGATGGGA 1318
 Db 1274 CTTCATCTAGCTCAATATGGTATGATGTTGCTTACCGGAGCTAAAGGAGATGGGA 1333
 Qy 1319 AAGGAACAGAGTTGCGAGTTGCTTGTAGGGTTAACTGTACAGCCGGTT 1378
 Db 1334 AAGGTTAAAGTTGGCAGTTGCTTACAGCTTACAGCTGCAAGGAGATGGGA 1393
 Qy 1379 GGGGGCTCTGGCAATGCGGCTCTGGCTTAACATCTGGGAACTTGTGCTT 1438
 Db 1394 GGGGGCTCTAAACATGTCAGCTGACAATAGTGTACAGCTGCAAGGAGA 1453
 Qy 1439 GATATCGGTTAGATCGAT 1458
 Db 1454 GATACCCGGTCAAAATGAT 1473

Search completed: June 10, 2003, 20:38:01
 Job time : 370 secs